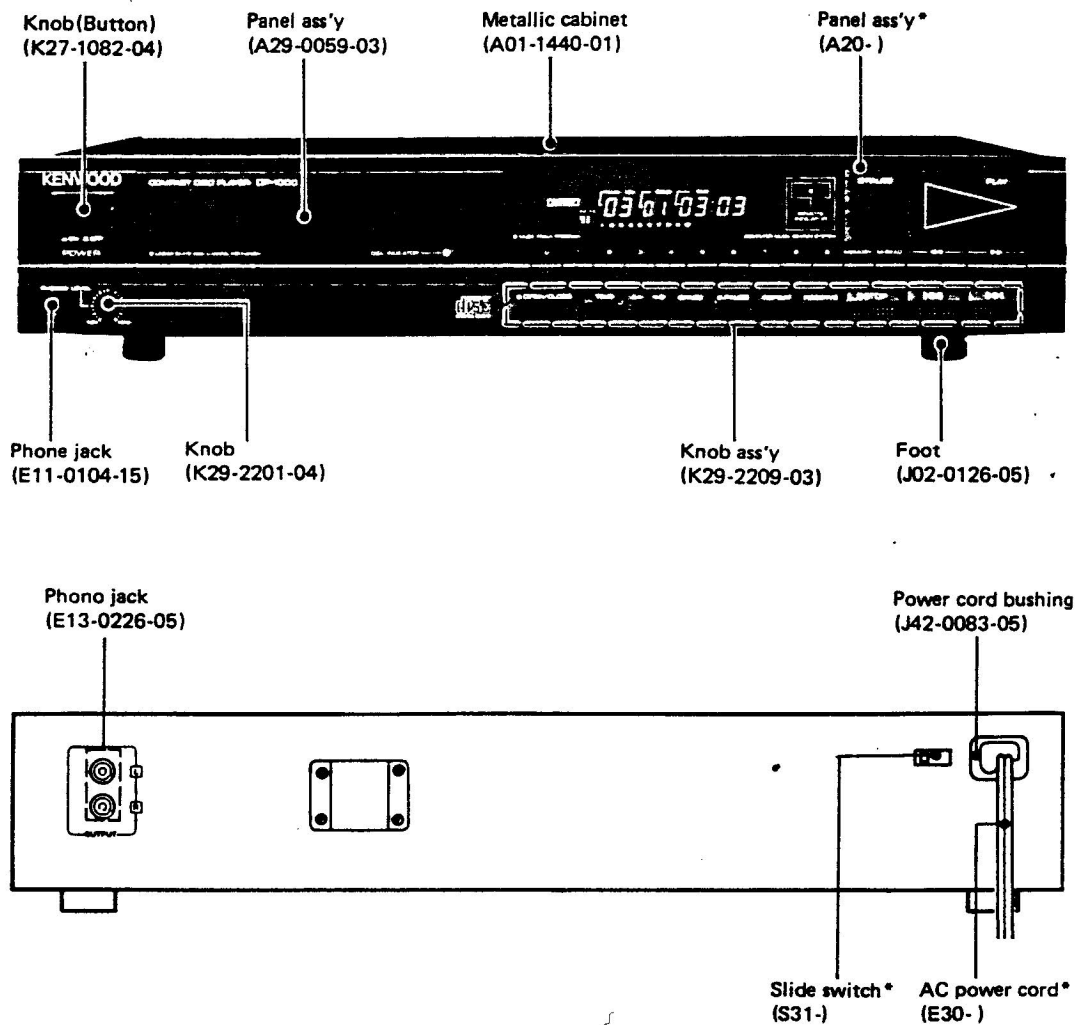


KENWOOD

DP-1000

COMPACT DISC PLAYER



In accordance with Federal regulations, following this reproduction, labels on or inside the product relating to laser product safety.

THIS KENWOOD Corp. certifies that equipment conforms to CEHS Regulations No. 21 CFR 101.10 and 101.11.

DANGER - Laser radiation may cause eye injury. Do not look into beam. **VOID DIRECT & POSITIVE TO BEAM.**

THE QUALITY OF
THIS MANUAL IS
THE BEST THAT
IS AVAILABLE

*Refer to parts list on page 16.

DISASSEMBLY FOR REPAIR

MECHANISM DISASSEMBLY PROCEDURE

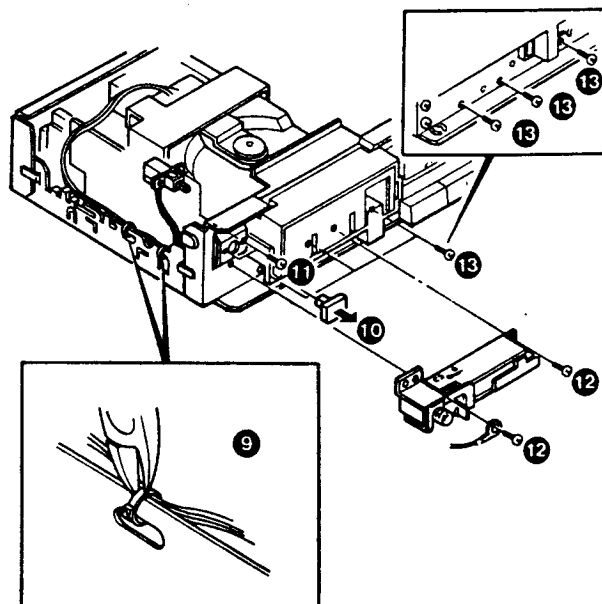
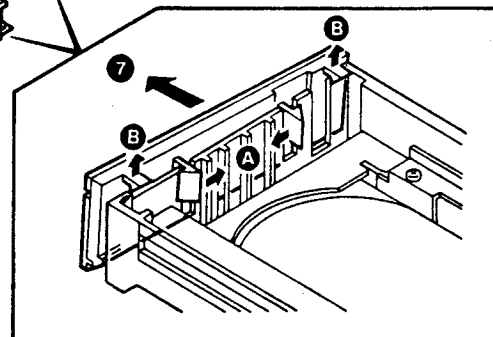
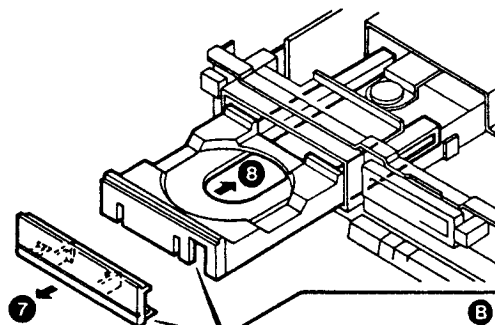
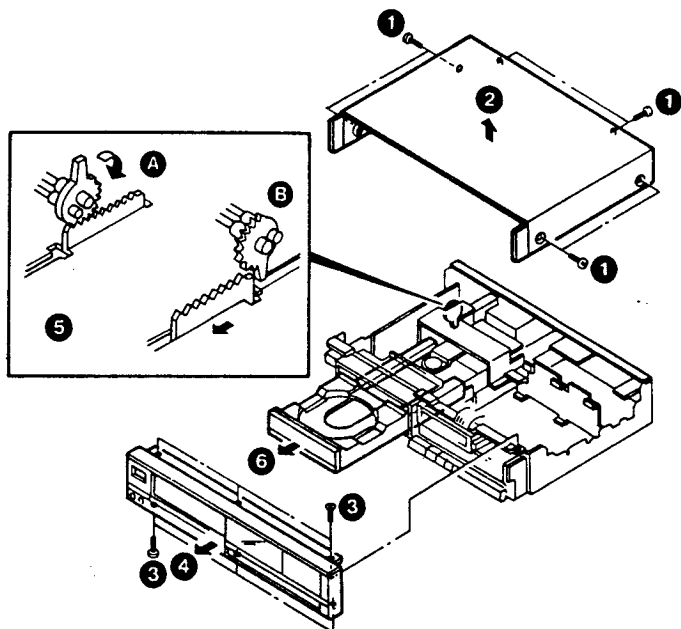
Note : The AC cord must be pulled off before starting the following procedure.

1. Remove the case (1 , 2).
2. Remove the six set screws at the top and bottom of the front panel (3). (The top three screws are flat pan-head screws.)
3. Slowly remove the panel toward you (4).
4. Turn the stem of the gear located at the rear left as indicated (toward A until it stops at the bottom (see B). This drives the tray toward you (5).
5. Slowly pull the tray out toward you (6).

6. Push in the tray panel clamping hooks as indicated by A and B to remove tray panel (7).
7. After removing the tray panel, slowly push back the tray into the set (8).

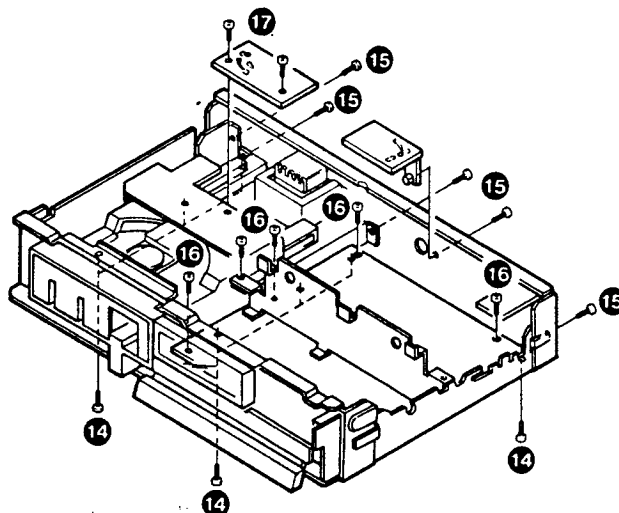
For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
 8 Cherry Tree Rd, Chinnor
 Oxon OX9 4QY
 Tel:- 01844-351694 Fax:- 01844-352554
 Email:- enquiries@mauritron.co.uk

8. Cut the wire clammer, loosen the two set screws of the power switch knob, and then remove the power switch from the chassis (9 , 10 , 11).
9. Remove the headphone board from the front bottom of the tray (12 , 13).

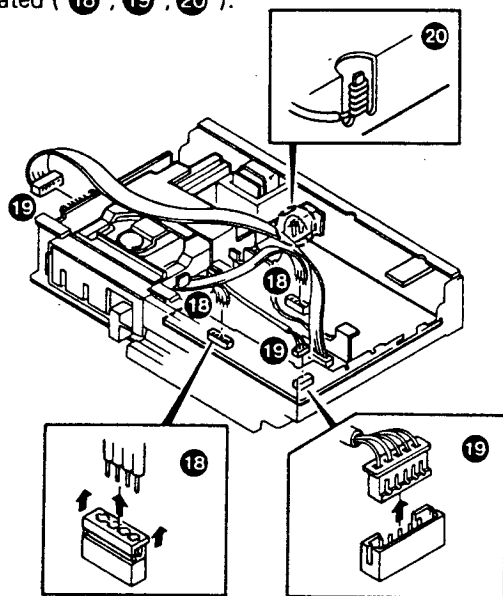


DISASSEMBLY FOR REPAIR

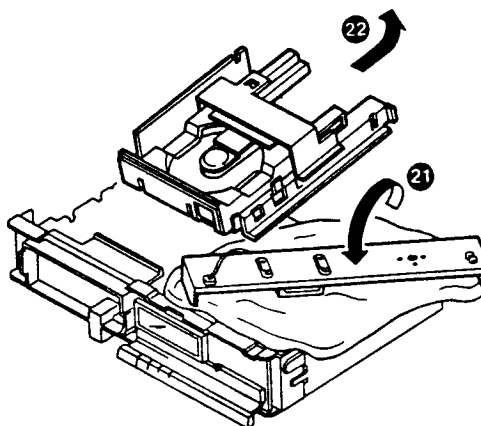
10. Remove the mechanism set screws, some of the back-panel and circuit board set screws (14 , 15 , 16 , 17).



11. Remove the cable connectors and wrapping, which connect the mechanism to other circuit boards, as illustrated (18 , 19 , 20).



12. Cover the set with a piece of cloth and put the back panel on it (21). Then, slowly pull the mechanism off backward (22).

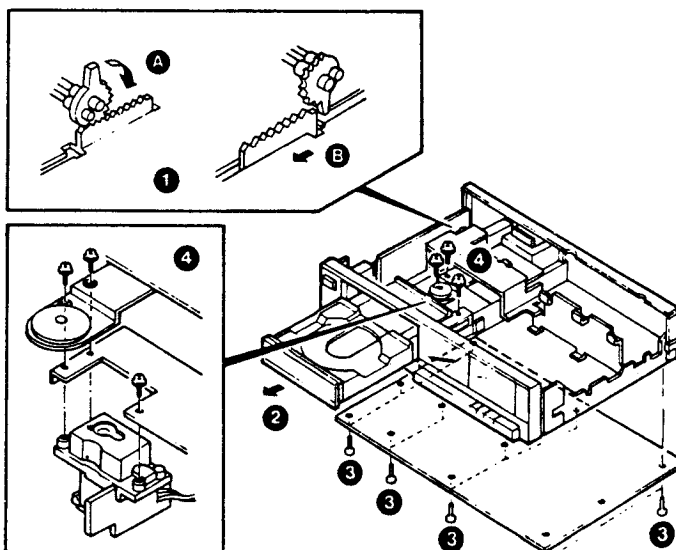


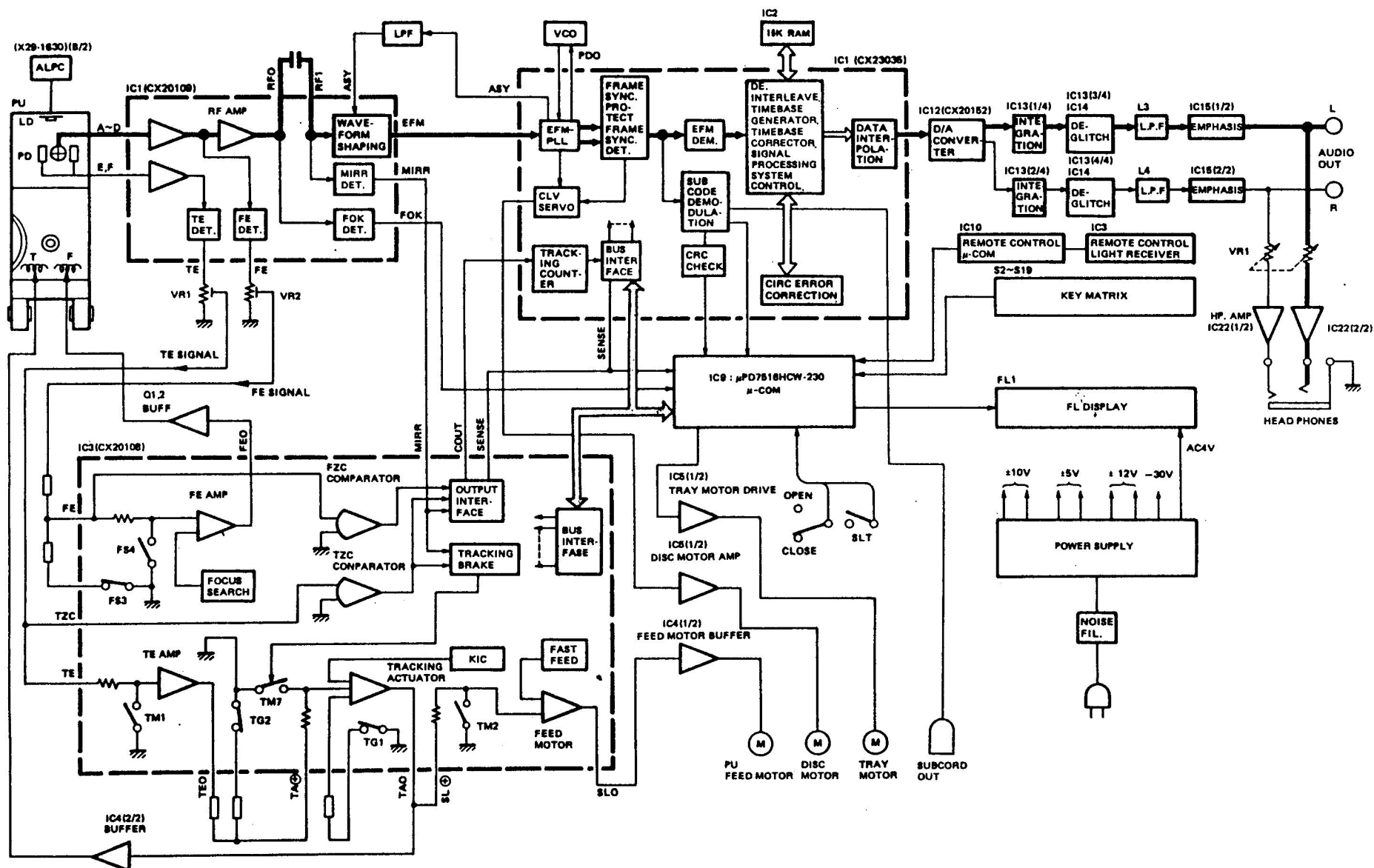
LASER PICKUP DISASSEMBLY PROCEDURE

1. Turn the rear left gear stem as indicated by A to the bottom B ; similarly to the mechanism disassembly procedure (1), and pull the tray off toward you (2).
2. Remove the bottom plate set screws (3).
3. Remove the three screws setting the laser pickup to the mechanism (4).

Note : The laser pickup should not be removed unless it is determined to be malfunctions.

When mounting a new laser pickup, all possible anti-electrostatic measures should be taken (against the work desk, human body, and soldering iron, etc.). The laser diode short pin should be remained attached until immediately before the set is operated as far as possible. A failure to observe any of these precautions may shorted the laser diode life, resulting in a malfunction of the set in a shorter period.





BLOCK DIAGRAM

CIRCUIT DESCRIPTION

Description of components

CONTROL CIRCUIT UNIT (X29-1632-72)

Components	Purpose/Function	Operation/Condition/Compatibility
IC1	3-beam light PU pre-amplifier	Generates a focus error signal, a tracking error signal, and an RF signal. This also provides a phase and an automatic symmetry correction capabilities. (See the DP-2000 Service Manual for details.)
IC3	Remote control pre-amplifier	Amplifies and converts the infra-red signal input from the infra-red diode to a digital signal (0V~5V).
Q1	IC1 FOK current amplifier	Used as an emitter follower to serve as an FOK current amplifier.
Q4	FL driving transistor	Used as an emitter follower to supplement the current of the output port to the microprocessor.
Q5	FOK buffer	FOKS signal current amplifier

PROCESSOR UNIT (X32-1050-11)

Components	Purpose/Function	Operation/Condition/Compatibility
IC1	Signal processing IC	Provides EFM demodulation, synchronizing separation, error correction, CLV servo, and PLL. (See the DP-2000 Service Manual for details.)
IC2	Memory S-RAM	Compatible with the following IC products : CXK5816M (Sony), HM6116FP-4 (Hitachi), MB8416-20LPF (Fujitsu), and TC5517AF-2 (Toshiba).
IC3	Servo IC	Generates "search" pulses for addressing the focus servo, tracking servo, or drive motor servo. (See the DP-2000 Service Manual for details.)
IC4	Power operational amplifier	Tracking actuator driver (2/2) and feed motor driver (1/2).
IC5	Power operational amplifier	Disc motor driver (1/2) and tray motor driver (1/2).
IC6	Operational amplifier	CLV servo amplifier (2/2) and PLL amplifier (1/2).
IC7	C-MOS NAND GATE	Used as invertors (1/4, 3/4, and 4/4) and a clock selector (2/4). When pin 3 of IC9 (CHNG) is "H", the clock selector feeds WFCK from pin 25 of IC1 to pin 9 of IC9 (SCK). When "L", it feeds clock SCK from pin 9 of IC9 to the CLK inputs of KC1 and IC3.
IC8	C-MOS 4-bit data selector	When pin 58 of IC9 (AKEY) is "L", this selector inputs data from IC10; the remote control microprocessor to K0 through K3 of IC9. When "H", it inputs the scan input from the tact switch to K0 through K3 of IC9.
IC9	Main microprocessor	Controls display and DP-1000 set operation.
IC10	Remote control microprocessor	When the data from the remote control preamplifier agrees with the custom code of the set, this processor informs the main microprocessor IC9 that the data has arrived and then transfers the data to it.
IC11	Reset IC	This IC resets the set by maintaining its output (pin 3) at "L" until the input voltage (pin 1) rises up to 4.4V±0.2V after the set is turned on. Capacitor 7 (3.3μF) determines the duration of the reset signal.
IC12	D/A converter	Provides the same function as CX20017 but cannot be replaced with CX20017. (See the DP-2000 Service Manual for details.)
IC13	FET input operational amplifier	DAC output I-V conversion (1/4, 2/4) and sample holding (3/4, 4/4).
IC14	C-MOS analog switch	Used as the switch for the sample holding circuits.
IC15	Operational amplifier	Functions as a de-emphasis circuit and an output amplifier.
IC16	3-terminal regulator	Supplies the +5V source to the digital and servo system.
IC17	3-terminal regulator	Supplies the -5V source to the servo system.
IC18	3-terminal regulator	Supplies the +12V source to the DAC system.
IC19	3-terminal regulator	Supplies the -12V source to the DAC system.
IC20	3-terminal regulator	Supplies the -5V source to the DAC system.
IC21	3-terminal regulator	Supplies the +5V source to the DAC system.
IC22	Headphone amplifier	
Q1,Q2	Focus driver	Current buffer for the output of the focus servo amplifier IC3.
Q3	Inverting level shifter	Inverts the MON output of IC1, shifting the level from "L" to -12V and "H" to +5V.
Q4	Switch	Lowens the ASY terminal of CN8 to -12V to disable the automatic symmetry circuit when the MON output of IC1 is "L". This transistor is disabled when the MON terminal is "H".
Q5	Switch	This FET transistor removes the offset from IC5 (1/2) to disable the disc motor when the MON output of IC1 is "L". When the MON terminal is "H", it is open.

CIRCUIT DESCRIPTION

Components	Purpose/Function	Operation/condition/compatibility
Q6	Constant-voltage circuit	Constant-voltage circuit supplying the power to the PU ALPC. The output (emitter) is -9V.
Q7	Switch	This circuit turns on/off the PU laser by controlling the base potential of Q6 via the LDC output of IC9 (pin 1). It turns the laser on when LDC is "H", and turns the laser off when "L".
Q8	Transient LED turning-on prevention circuit	Prevents the remote controlling LED from turning on when power is turned on or off. This transistor is in conduction (on) while the reset ("L") signal from IC11 is active ("H").
Q9	De-emphasis circuit inverter	Inverts the emphasis signal from the microprocessor IC9 (pin 64).
Q10	De-emphasis circuit level shifter	Shifts the emphasis signal level from the microprocessor IC9 (pin 46) from "H" to +12V and "L" to -12V.
Q11	Muting relay driver	When the R-MUT output from IC9 (pin 2) is "H", this transistor turns on, disabling muting. When "L", it turns off, enabling muting.
Q12	Constant-current FET	This FET generates the reference potential for the current to be supplied to one DAC set. It is used in conjunction with D35 to provide a drain voltage of approximately +2.5V.
Q13	Constant-current FET	Determines the DAC bias current.
Q14,Q15	Discharge FET's	Functions as the switch to discharge the charge stored in the DAC output I-V conversion capacitor.
Q16,Q17	De-emphasis switch	These FET's functions as a switch to insert or remove a de-emphasis constant in parallel with the IC15 feedback resistor.

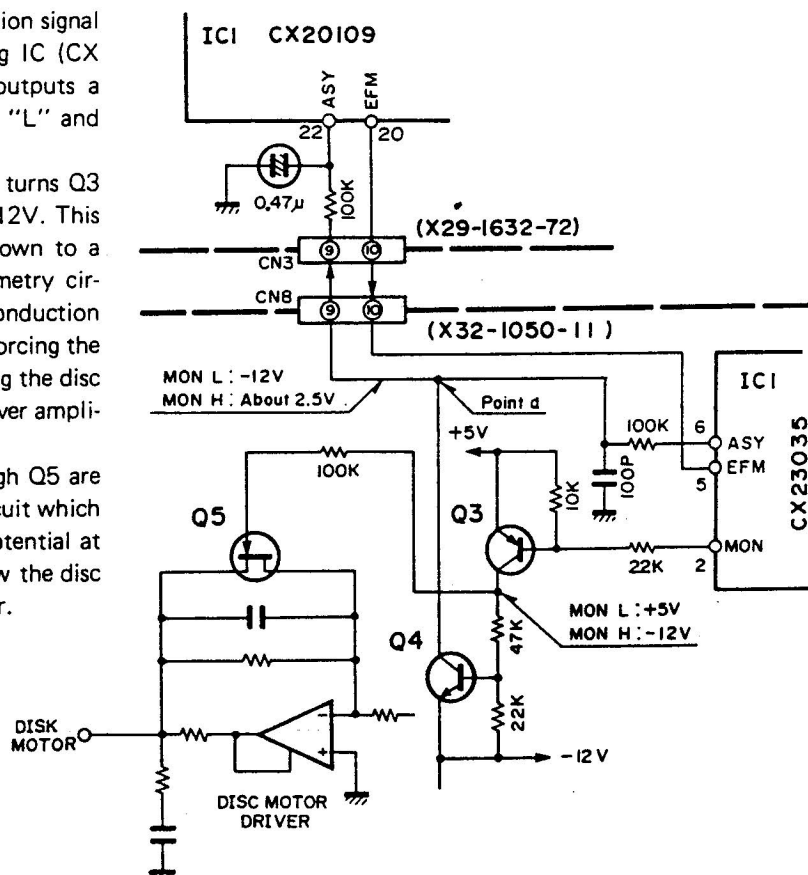
Circuit Operation Descriptions

EFM Signal inout inhibiting circuit

The DP-1000 uses the disc motor drive instruction signal to input the EFM signal to the signal processing IC (CX23035). The MON terminal of the CX23035 outputs a signal which disables the disc motor when it is "L" and drives the disc motor when it is "H".

"L" at the MON terminal turns Q3 on in turn, lowering the voltage at point a to -12V. This also pulls the ASY terminal of the CX20109 down to a negative potential, disabling the automatic symmetry circuit and fixing the EFM terminal at "H". Q3 in conduction also keeps Q5 in conduction or in the on state, forcing the disc motor driver output at 0V and thus preventing the disc motor from being turned by the offset of the driver amplifier.

When the MON terminal rises "H", Q3 through Q5 are turned off, enabling the automatic symmetry circuit which supplies the EFM signal to the CX23035. The potential at point a rises up to approximately +2.5V to allow the disc motor driver to feed the drive voltage to the motor.



CIRCUIT DESCRIPTION

Remote control/Key data switching circuit

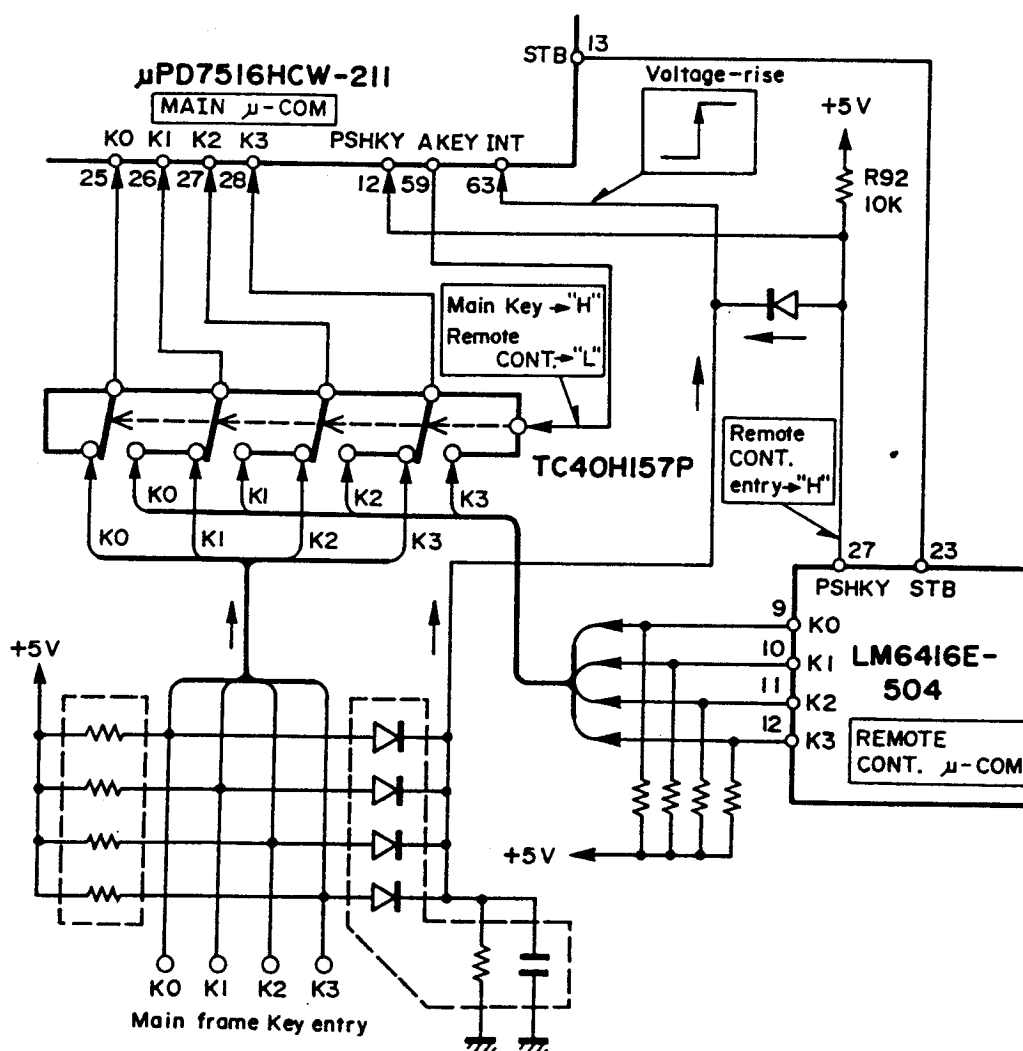
To inform the main microprocessor (μ PD7516HCW) that any instruction has arrived from a main frame key or the remote control microprocessor, a signal voltage rise edge must be given to its INT terminal (pin 63). When a main frame key is pressed, some of K0 through K3 rises which are fed to the INT terminal through the composite element diodes. When the remote control microprocessor receives any remote control data, it determines what the data is and raises its PSHKY terminal from "L" to "H". This change is transmitted to the INT terminal of the main microprocessor through a diode.

When a voltage rise edge (\uparrow) is received at its INT terminal, the main microprocessor check to find if the PSHKY terminal is "H". If it is, the main microprocessor determines that the instruction is from the remote control

microprocessor. Otherwise, it determines that the instruction is from a main frame key.

Through a PSHKY logic, the main microprocessor gives an instruction ("H" when the instruction is from a main frame key or "L" otherwise) to the TC40H157P data selector via the AKEY terminal. According this instruction, the data selector properly routes the data from the main frame key or the remote control microprocessor.

Data from a main frame key is input to the main microprocessor through a key scan. When receiving data from the remote control microprocessor, the main microprocessor sends a clock signal to the remote control microprocessor which responds with a timing signal via the STB terminal. The main microprocessor strobes the data in by using the timing clock available at its STB terminal.



ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG
1	VCO ADJUSTMENT	—	Connect an f-counter across TP11 and GND.	Tray open, or stop mode	Turn core of coil of L1 of X32-1050(A/4)	4.23MHz	(a)
2	LASER POWER CHECK (When PU may be defective)	—	Set an optical power meter above the pickup.	Tray - open. Connect the base of Q7 of X32-1050(A/4) to the GND.	—	OK if from 200 μ V to 300 μ V.	(b)
3	LASER OPERATING CURRENT CHECK (When PU may be defective)	—	Measure the voltage across two ends of R4 of X32-1050(A/4).	Tray - open. Connect the base of Q7 of X32-1050(A/4) to the GND.	—	Acceptable when larger by 5 to 6mA then the current marked on the pickup.	(c)
4	RF OFFSET ADJUSTMENT	—	Connect an oscilloscope to TP2(RF) of X29-1632(B/6). Connect the scope's GND to TP1(GND).	Tray open, or stop mode.	Turn VR5 of X29-1632(B/6). (RF OFFSET)	Adjust to -0.60(V).	(d)
5	TEST MODE SETUP	Place test disc Type 3 on the tray and set the unit to the loaded condition.	Short-circuit between TP12 and TP13 of X32-1050(A/4).	Turn POWER SW OFF then ON again.	—	Check that the display is "01 .. 00:00"	(e)
6	TANGENTIAL SETTING	Place test disc Type 3 on the tray and set the unit to the loaded condition.	Connect and oscilloscope to TP2(RF) of X29-1632(B/6).	Press M-READ, and laser is focused. (In the test mode.)	Hex socket screw below mechanism	Maximum amplitude	(d)
7	FOCUS OFFSET COARSE ADJUSTMENT	Place test disc Type 3 on the tray and set the unit to the loaded condition.	Connect and oscilloscope to TP2(RF) of X29-1632(B/6).	Press M-READ, and laser is focused. (In the test mode.)	Turn VR3 of X29-1632(B/6).	Maximum amplitude	(d)
8	DIFFRACTION GRID ADJUSTMENT (PU)	Place test disc Type 3 on the tray and set the unit to the loaded condition.	Connect CH1 of oscilloscope to TP2(RF) of X29-1632(B/6), and CH2 to TP3(TE).	Press M-READ, and laser is focused. (In the test mode.)	Pickup adjusting hole— Use the grid driver.	See Fig. 1.	(f)
9	T. ERROR BALANCE COARSE ADJUSTMENT	Place test disc Type 3 on the tray and set the unit to the loaded condition.	Connect CH1 of oscilloscope to TP2(RF) of X29-1632(B/6), and CH2 to TP3(TE).	Press M-READ, and laser is focused. (In the test mode.)	Turn VR4 of X29-1632(B/6).	Adjust so that the T. ERROR amplitude is symmetrical above and below 0(V). (Photo 5)	(f)
10	TANGENTIAL AND FOCUS OFFSET FINE ADJUSTMENTS	Place test disc Type 3 on the tray and set the unit to the loaded condition.	Connect and oscilloscope to TP2(RF) of X29-1632(B/6).	Press the PLAY Key. (The unit starts the trace operation.) (In the test mode.)	VR3 of X29-1632(B/6), and hex socket screw above mechanism	Alternately turn VR3 and hex socket screw to obtain optimum waveform.	(d)
11	T. ERROR BALANCE FINE ADJUSTMENT	Place test disc Type 3 on the tray and set the unit to the loaded condition.	Connect CH1 of oscilloscope to TP2(RF) of X29-1632(B/6), and CH2 to TP3(TE).	Press the M-READ Key (with focus servo only). (In the test mode.)	Turn VR4 of X29-1632(B/6).	Adjust so that the T. ERROR amplitude is symmetrical above and below 0(V). (Photo 5)	(f)
12	FOCUS GAIN ADJUSTMENT	Place a test disc which is as flawless as possible, and complete loading.	Connect a servo-adjusting jig to CN4 of X29-1632. (f=1.0kHz, V OUT=40mVrms)	Turn POWER SW OFF then ON again, and press the PLAY key to start normal play.	Turn VR2 of X29-1632(B/6).	Adjust so that the millivoltmeter connected to the jig indicates 40mVrms.	(g)
13	TRACKING GAIN ADJUSTMENT	Place a test disc which is as flawless as possible, and complete loading.	Connect a servo-adjusting jig to CN4 of X29-1632. (f=1.0kHz, V OUT=40mVrms)	Normal play	Turn VR1 of X29-1632(B/6).	Adjust so that the millivoltmeter connected to the jig indicates 40mVrms.	(g)
14	DAC ADJUSTMENT	Test disc YDS-7 Type 3	Connect a millivoltmeter to the output terminal.	Play 1kHz, 0dB signal.	VR2 of X32-1050(A/4).	Adjust to obtain the output level from 1.9 to 2.0Vrms.	(h)

ADJUSTMENT

Diffraction grid adjustment

Adjust in the test mode (with focus servo only)

Note : The test mode is the condition in which power is turned on after short-circuiting between TP12 (TEST-12) and TP13 (D.GND-13) in the signal processing unit (X32-1050-00) (A/4).

For details, refer to the DP-2000's service manual.

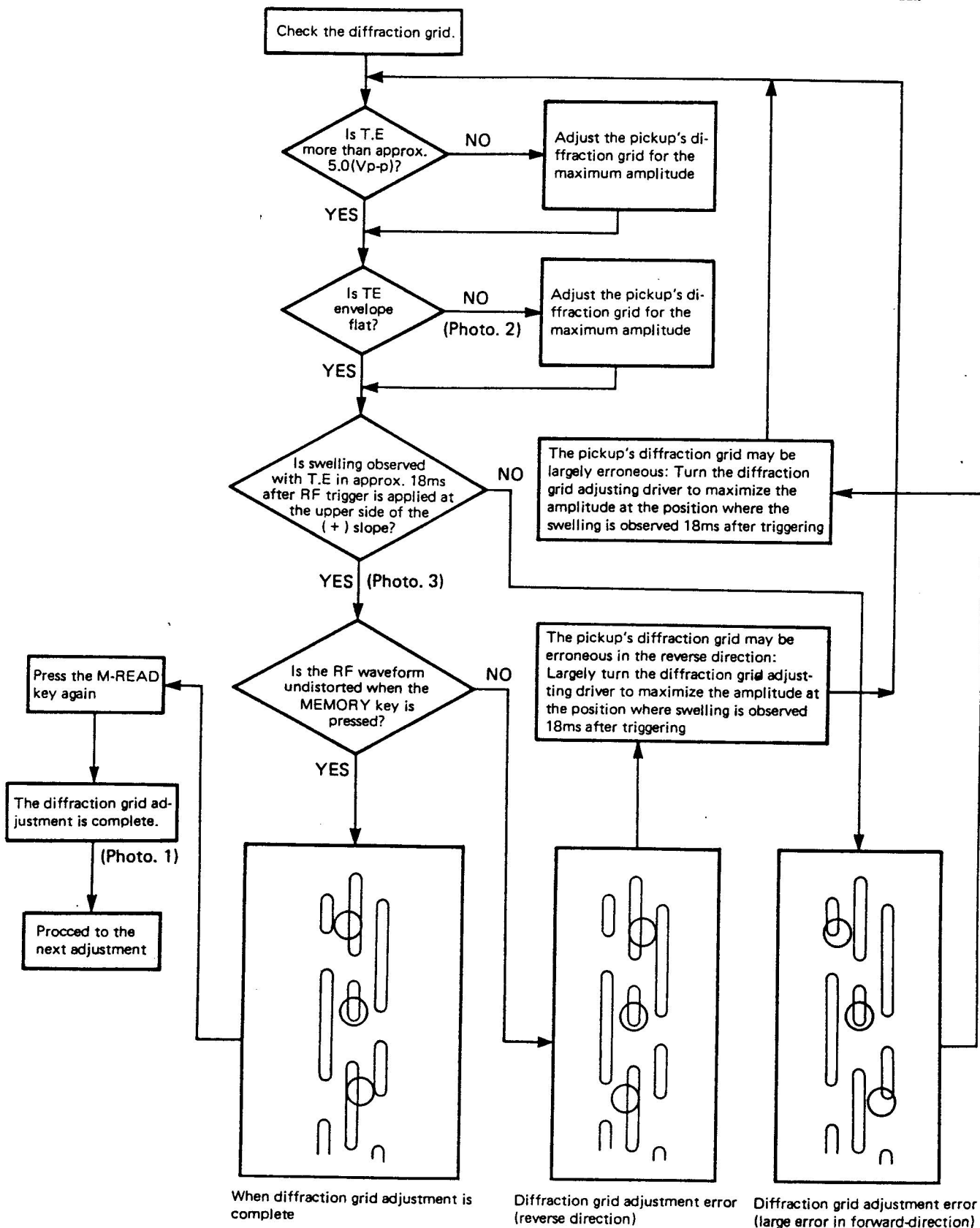


Fig. 1

REGLAGE

N°	ITEM	REGLAGE D'ENTREE	REGLAGE DE SORTIE	REGLAGE DE LA LECTURE	POINT D'ALIGNEMENT	ALIGNEMENT POUR	FIG
1	RÉGLAGE VCO	-	Raccorder un compteur entre TP11 et GND.	Tiroir ouvert ou mode d'arrêt.	Tourner le noyau de bobine de L1 de X32-1050(A/4).	4.23MHz	(a)
2	VÉRIFICATION DE PUISSANCE DE LASER (Quand PU peut être défectueux)	-	Placer un compteur de puissance optique au-dessus du capteur.	Tiroir ouvert. Raccorder la base de Q7 de X32-1050(A/4) à GND.	-	Correct si entre 200µW et 300µW.	(b)
3	VÉRIFICATION DU COURANT DE FONCTIONNEMENT DU LASER (Quand PU peut être défectueux)	-	Mesurer la tension entre les deux extrémités de R4 de X32-1050(A/4).	Tiroir ouvert. Raccorder la base de Q7 de X32-1050(A/4) à GND.	-	Acceptable si supérieur de 5 à 6mA au courant marqué sur le capteur.	(c)
4	RÉGLAGE DE SUPPRESSION HF	-	Raccorder un oscilloscope à TP2(HF) de X29-1632(B/6). Raccorder GND de l'oscilloscope à TP1(GND).	Tiroir ouvert ou mode d'arrêt.	Tourner VR5 de X29-1632(B/6). (RF OFFSET)	Ajuster sur -0.60(V)	(d)
5	MONTAGE DU MODE DE TEST	Placer un disque test de type 3 sur le tiroir et régler l'appareil en condition de chargement.	Court-circuiter entre TP12 et TP13 de X32-1050(A/4).	Placer l'interrupteur POWER OFF à nouveau sur ON.	-	Vérifier que l'affichage est "01 .. 00:00".	(e)
6	RÉGLAGE TANGENTIEL	Placer un disque test de type 3 sur le tiroir et régler l'appareil en condition de chargement.	Raccorder un oscilloscope à TP2(RF) de X29-1632(B/6).	Presser M-READ et le laser est mis au point. (En mode de test)	Vis à prise hexagonale sous le mécanisme	Amplitude maximum	(d)
7	RÉGLAGE APPROXIMATIF DE LA SUPPRESSION DE MISE AU POINT	Placer un disque test de type 3 sur le tiroir et régler l'appareil en condition de chargement.	Raccorder un oscilloscope à TP2(RF) de X29-1632(B/6).	Presser M-READ et le laser est mis au point. (En mode de test)	Tourner VR3 de X29-1632(B/6).	Amplitude maximum	(d)
8	RÉGLAGE DU RÉSEAU DE DIFFRACTION(PU)	Placer un disque test de type 3 sur le tiroir et régler l'appareil en condition de chargement.	Raccorder le CH1 d'un oscilloscope à TP2(RF) de X29-1632(B/6) et CH2 à TP3(TE).	Presser M-READ et le laser est mis au point. (En mode de test)	Trou de réglage du capteur - Utiliser l'entraîneur de réseau.	Voir la figure 1.	(f)
9	RÉGLAGE APPROXIMATIF DE LA BALANCE T.ERROR.	Placer un disque test de type 3 sur le tiroir et régler l'appareil en condition de chargement.	Raccorder le CH1 d'un oscilloscope à TP2(RF) de X29-1632(B/6) et CH2 à TP3(TE).	Presser M-READ et le laser est mis au point. (En mode de test)	Tourner VR4 de X29-1632(B/6).	Régler de manière à ce que l'amplitude T.ERROR soit symétrique en dessus et au dessous de 0(V). (Photo 5)	(f)
10	RÉGLAGES PRÉCIS DE LA SUPPRESSION TANGENTIELLE ET DE MISE AU POINT.	Placer un disque test de type 3 sur le tiroir et régler l'appareil en condition de chargement.	Raccorder un oscilloscope à TP2(RF) de X29-1632(B/6).	Presser la touche PLAY. (L'appareil commence le repérage.) (Dans le mode de test.)	VR3 de X29-1632(B/6) et vis à prise hexagonale au-dessus du mécanisme.	Tourner alternativement VR3 et la vis à prise hexagonale pour obtenir la forme d'onde optimale.	(d)
11	RÉGLAGE PRÉCIS DE LA BALANCE T.ERROR.	Placer un disque test de type 3 sur le tiroir et régler l'appareil en condition de chargement.	Raccorder le CH1 d'un oscilloscope à TP2(RF) de X29-1632(B/6) et CH2 à TP3(TE).	Presser la touche M-READ (avec asservissement de mise au point seulement). (Dans le mode de test.)	Tourner VR4 de X29-1632(B/6).	Ajuster de manière à ce que l'amplitude T.ERROR soit symétrique en dessus et au dessous de 0(V) (Photo 5)	(f)
12	RÉGLAGE DU GAIN DE MISE AU POINT	Placer un disque test le plus parfait possible et effectuer le chargement.	Raccorder un gabarit de réglage d'asservissement à CX4 de X29-1632. (f=1.0kHz. V OUT=40Vrms)	Placer l'interrupteur POWER OFF à nouveau sur ON et presser la touche PLAY pour commencer la lecture normale.	Tourner VR2 de X29-1632(B/6).	Régler de manière à ce que le millivoltmètre raccordé au gabarit indique 40Vrms.	(g)

REGLAGE

N°	ITEM	REGLAGE D'ENTREE	REGLAGE DE SORTIE	REGLAGE DE LA LECTURE	POINT D'ALIGNEMENT	ALIGNEMENT POUR	FIG
13	RÉGLAGE DU GAIN D'ALIGNEMENT	Placer un disque test le plus parfait possible et effectuer le chargement.	Raccorder un gabarit de réglage d'asservissement à CN4 de X29-1632. ($f = 1,0 \text{ kHz}$, $V_{OUT} = 40 \text{ mVrms}$).	Lecture normale	Tourner VR2 de X29-1632(B/6)	Régler de manière à ce que le millivoltmètre raccordé au gabarit indique 40 mVrms .	(g)
14	REGLAGE DAC	Disque test YDS-7 Type 3	Raccorder un millivoltmètre à la borne de sortie.	Lire un signal d'1 kHz, 0dB.	Tourner VR2 de X32-1632(A/4)	Régler pour obtenir un niveau de sortie entre 1.9 et 2.0 Vrms .	(h)

Réglage du réseau de diffraction

Régler en mode de test (avec l'asservissement de mise au point seulement)

Remarque : Le mode de test est la condition dans laquelle l'alimentation est fournie après avoir court-circuité entre TP12 (TEST-12) et TP13 (D.GND-13) dans l'appareil de traitement du signal (X32-1050-00) (A/4). Pour plus de détails, se référer au manuel d'entretien du DP-2000.

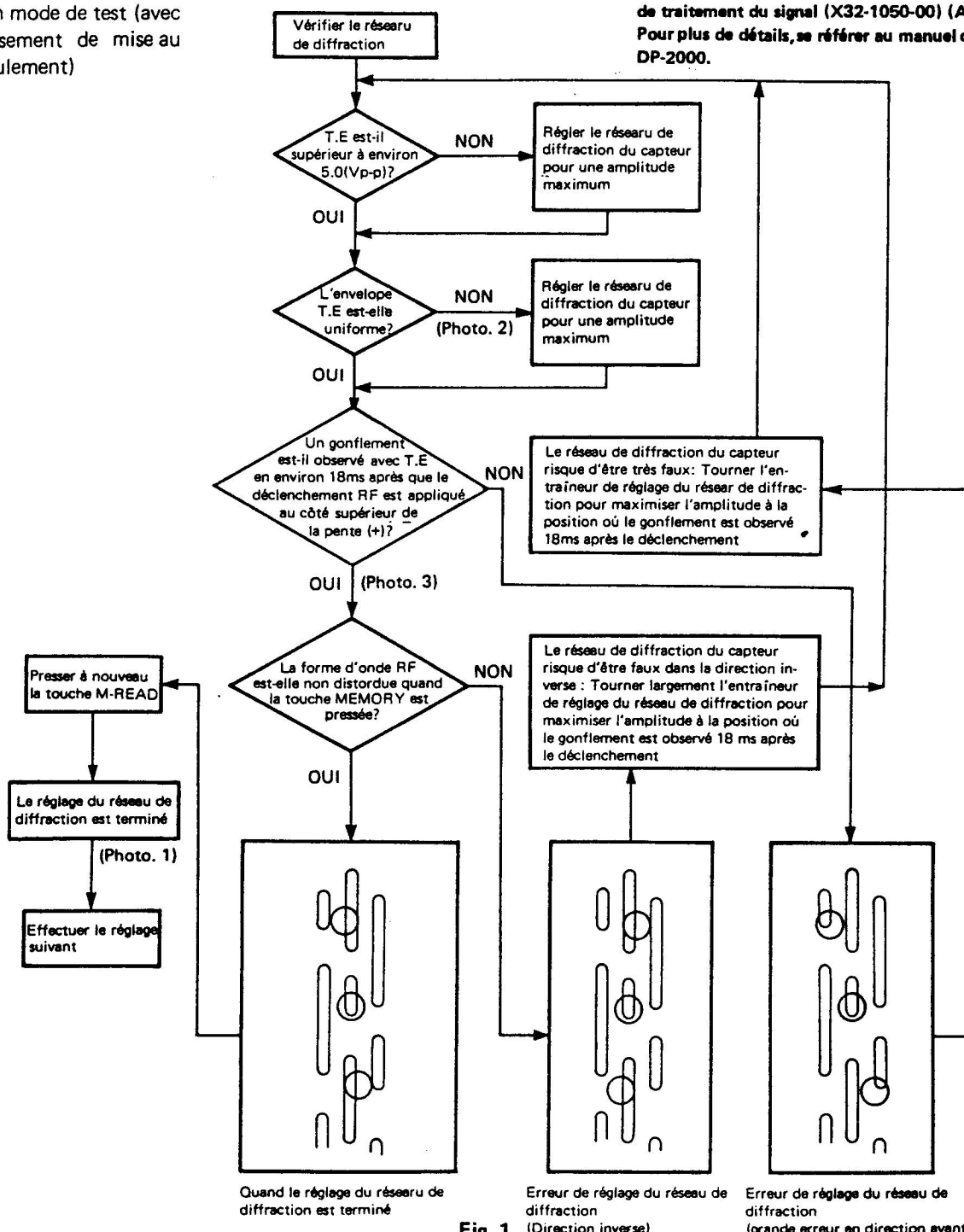
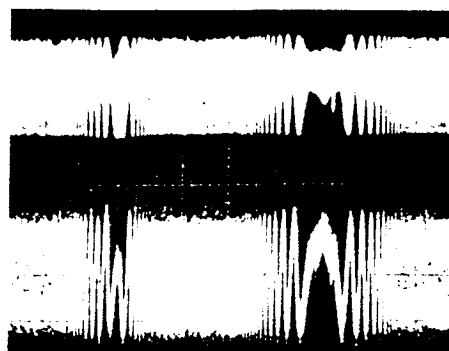


Fig. 1

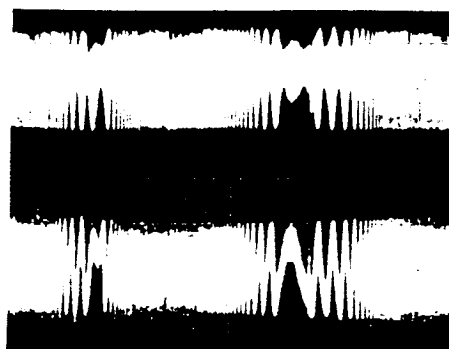
ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	SPIELER-EINSTELLUNG	ABGLEICH-PUNKT	ABGLEICHUNG	ABB.
1	VCO-EINSTELLUNG	-	Einen Frequenzzähler zwischen TP11 und GND anschließen.	Träger geöffnet oder Stop-Betriebsart	Kern der Spule von L1 von X32-1050 (A/4) drehen	4,23MHz	(a)
2	LASERLEISTUNGS PRÜFUNG (wenn PU defekt sein könnte)	-	Einen optischen Leistungsmesser über den Tonabnehmer setzen	Träger - geöffnet. Die Basis von Q7 von X32-1050(A/4) mit GND verbinden.	-	In Ordnung wenn zwischen 200µV und 300µV.	(b)
3	LASERBETRIEBSSTROM PRÜFUNG (wenn PU defekt sein könnte)	-	Die Spannung zwischen den beiden Enden von R4 von X32-1050(A/4) messen.	Träger - geöffnet. Die Basis von Q7 von X32-1050(A/4) mit GND verbinden.	-	Akzeptierbar, wenn um 5 bis 6mA größer als der auf dem Tonabnehmer angegebene Strom.	(c)
4	HF VERSATZ EINSTELLUNG	-	Ein Oszilloskop an TP2(HF) von X29-1632(B/6) anschließen. Die Masse des Oszilloskops an TP1(GND) anschließen.	Träger geöffnet oder Stop-Betriebsart.	VR5 von X29-1632(B/6) drehen. (HF-Versatz)	Auf -0,60(V) einstellen.	(d)
5	ANSCHLÜSSE FÜR TEST BETRIEBSART	Die Test-Disc Typ 3 auf den Träger legen und das Gerät auf den geladenen Zustand einstellen.	TP12 und TP13 von X32-1050(A/4) Kurzschließen.	Netzschalter aus und danach einschalten.	-	Überprüfen, das auf dem Display "01 00 00:00" angezeigt wird.	(e)
6	TANGENTIAL EINSTELLUNG	Die Test-Disc Typ 3 auf den Träger legen und das Gerät auf den geladenen Zustand einstellen.	Ein Oszilloskop an TP2(HF) von X29-1632(B/6) anschließen.	M-READ drücken, dann wird der Laser fokussiert. (In der Test Betriebsart.)	Innensechskant-schraube unter Mechanismus	Maximale Amplitude	(d)
7	FOKUSVERSATZ GROBEINSTELLUNG	Die Test-Disc Typ 3 auf den Träger legen und das Gerät auf den geladenen Zustand einstellen.	Ein Oszilloskop an TP2(HF) von X29-1632(B/6) anschließen.	M-READ drücken, dann wird der Laser fokussiert. (In der Test Betriebsart.)	VR3 von X29-1632(B/6) drehen.	Maximale Amplitude	(d)
8	BEUGUNGSGITTER EINSTELLUNG (PU)	Die Test-Disc Typ 3 auf den Träger legen und das Gerät auf den geladenen Zustand einstellen.	Kanal 1 eines Oszilloskops an TP2(HF) von X29-1632(B/6) und Kanal 2 an TP3(TE) anschließen.	M-READ drücken, dann wird der Laser fokussiert. (In der Test Betriebsart.)	Tonabnehmer Einstellöffnung Den Gitter Schraubenzieher verwenden.	Siehe Abb. 1.	(f)
9	T.ERROR BALANCE GROBEINSTELLUNG	Die Test-Disc Typ 3 auf den Träger legen und das Gerät auf den geladenen Zustand einstellen.	Kanal 1 eines Oszilloskops an TP2(HF) von X29-1632(B/6) und Kanal 2 an TP3(TE) anschließen.	M-READ drücken, dann wird der Laser fokussiert. (In der Test Betriebsart.)	VR4 von X29-1632(B/6) drehen.	So einstellen, das die T.ERROR Amplitude über und unter 0(V) symmetrisch ist. (Foto 5)	(f)
10	TANGENTIAL UND FOKUSVERSATZ FEINEINSTELLUNGEN	Die Test-Disc Typ 3 auf den Träger legen und das Gerät auf den geladenen Zustand einstellen.	Ein Oszilloskop an TP2(HF) von X29-1632(B/6) anschließen.	Die PLAY-Taste drücken. (Das Gerät startet den abtast Betrieb.) (In order Test-Betriebsart.)	VR3 von X29-1632(B/6) und Innensechskant-schraube über Mechanismus	VR3 und die Innensechskant-schraube abwechselnd drehen, um die optimale Wellenform zu erhalten.	(d)
11	T-ERROR BALANCE FEINEINSTELLUNG	Die Test-Disc Typ 3 auf den Träger legen und das Gerät auf den geladenen Zustand einstellen.	Kanal 1 eines Oszilloskops an TP2(HF) von X29-1632(B/6) und Kanal 2 an TP3(TE) anschließen.	Die M-READ-Taste drücken. (nur mit Fokusserbo.) (In der Test Betriebsart.)	VR4 von X29-1632(B/6) drehen.	So einstellen, das die T.ERROR-Amplitude über und unter 0(V) symmetrisch ist. (Foto 5)	(d)
12	FOKUSVERSTÄRKUNG EINSTELLUNG	Eine Test-Disc, die so einwandfrei wie möglich sein sollte, aufliegen und laden.	Eine Servo Einstellvorrichtung an CX4 von X29-1632 anschließen. (f = 1,0kHz. V OUT = 40mVrms)	Den Netzschalter aus- und wieder einschalten und die PLAY-Taste drücken, um die normale Wiedergabe zu starten.	VR2 von X29-1632(B/6) drehen.	So einstellen, das der an die Vorrichtung angeschlossene Millivoltmeter 40mVrms anzeigt.	(g)

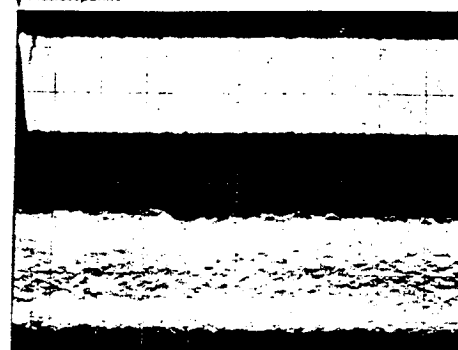
ADJUSTMENT/REGLAGE/ABGLEICH



20msec/div



Trigger point
Point de déclenchement
Auslösepunkt



Swelling observed
Gonflement observé
Schwellen beobachtet

- RF signal and T.Error signal after completion of diffraction grid adjustment
 - Signal RF et signal T.ERROR après avoir terminé le réglage du réseau de diffraction.
 - HF-Signal und T.-Fehlersignal nach Beendigung der Beugungsgitter-Einstellung
- (Photo. 1)
(Photo. 1)
(Foto. 1)

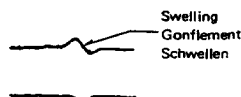
For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

- RF signal and T.Error signal with small diffraction grid error.
 - The T.Error level is small, and the envelope is as follows:
 - Signal RF et signal T.Error avec une petite erreur de réseau de diffraction
 - Le niveau T.ERROR est petit et l'enveloppe est comme suit:
 - HF-Signal und T.-Fehlersignal mit kleinem Beugungsgitter-Fehler
 - Der T.-Fehlerpegel ist klein und die Hüllkurve ist wie folgt:
- (Photo. 2)
(Photo. 2)
(Foto. 2)

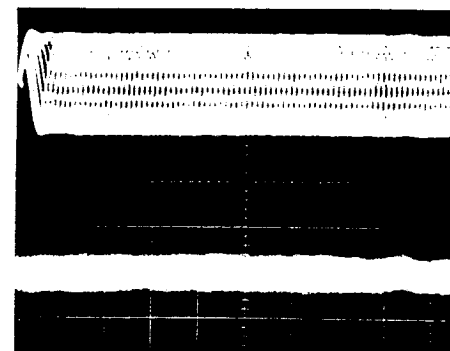


- RF signal and T.Error signal after completion of diffraction grid adjustment.
- Swelling is observed on the T.Error signal of approx. 18ms after the RF trigger point.
- Pay attention to the RF trigger point.
- Signal RF et signal T.ERROR après avoir terminé le réglage du réseau de diffraction.
- Le gonflement est observé sur le signal T.ERROR d'environ 18ms après le point de déclenchement RF.
- Attention au point de déclenchement RF.
- HF-Signal und T.-Fehlersignal nach Beendigung der Beugungsgitter-Einstellung.
- Am T.-Fehlersignal wird etwa 18ms nach dem HF-Auslösepunkt Schwellen beobachtet.
- Auf den HF-Auslösepunkt achten.

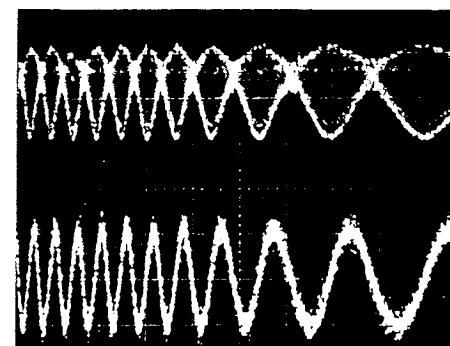
(Photo. 3)
(Photo. 3)
(Foto. 3)



ADJUSTMENT/REGLAGE/ABGLEICH



2msec/div



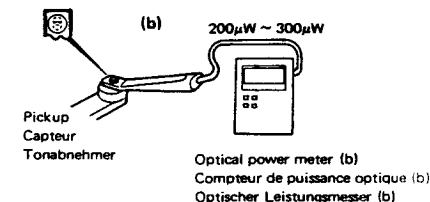
5msec/div

- When the diffraction grid position is correct, tracking servo is applied and RF signal is output.
- In the F spot, swelling is observed approx. 18ms after 18ms.
- Quand la position du réseau de diffraction est correcte, l'asservissement de mise au point est appliquée et le signal RF est mis en sortie.
- Dans le point F, le gonflement est observé environ 18ms après 18ms.
- Wenn die Position des Beugungsgitters korrekt ist, wird der Spurhalte-Serve zugegeben und das HF-Signal ausgegeben.
- An der F-Stelle wird nach etwa 18ms Schwellen beobachtet.

(Photo. 4)
(Photo. 4)
(Foto. 4)

- T. Error balance adjustment: Adjust so that the T.Error amplitude is symmetrical above and below 0(V).
- Réglage de la balance T.ERROR: Régler de manière à ce que l'amplitude T.ERROR soit symétrique au dessus et en dessous de 0(V).
- T.-Fehler balance-Einstellung: So einstellen, daß die T.-Fehleramplitude über und unter 0(V) symmetrisch ist.

(Photo. 5)
(Photo. 5)
(Foto. 5)



X29-1632-71

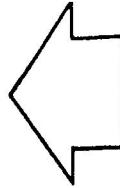
	B	C	E
Q1	—	4.9V	4.2V
Q4	—	—	4.9V
Q5	—	4.9V	—

IC1

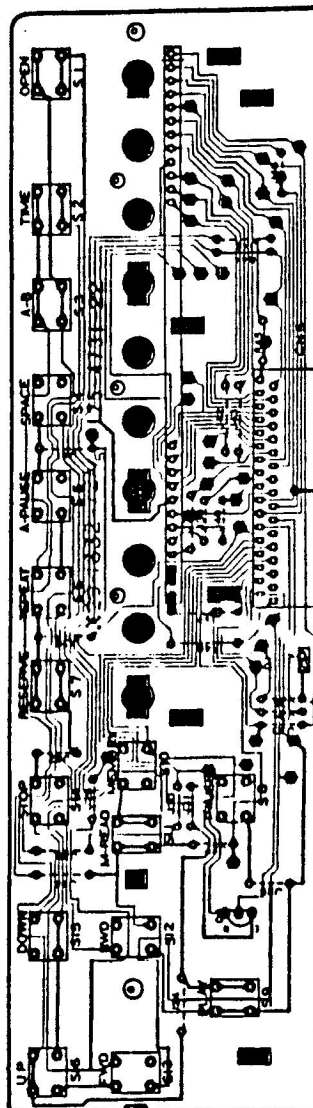
7	0V
12	0V
13	-4.0V
21	4.0V
23	4.0V
24	4.0V

IC3

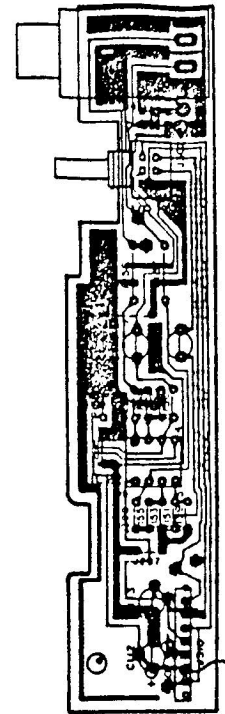
1	2.5V
2	—
3	1.6V
4	0V
5	1.4V
6	—
7	—
8	4.8V



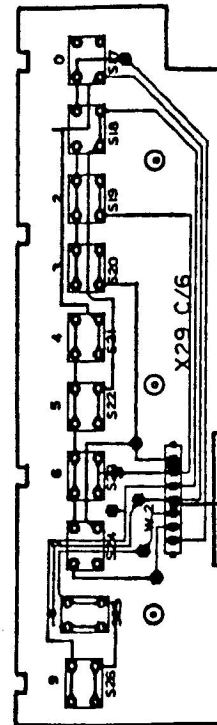
Front



Component side view

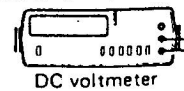


Foil side view

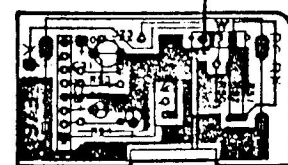


Component side view

(c) Laser operating current check :
Larger by 5~6mA then the current
marked on the P.U..



DC voltmeter



Component side view

MECHANISM ASS'Y (X92-1060-02)

Laser P.U.

RED

BLK

S3

S1 GRN

S2 GRY

DISC INDICATOR

(a) VCO ADJ: 4.23MHz

F-counter

Foil side view

Component side view

(c) Laser operating current check :
Larger by 5~6mA then the current
marked on the P.U..

DC voltmeter

Component side view

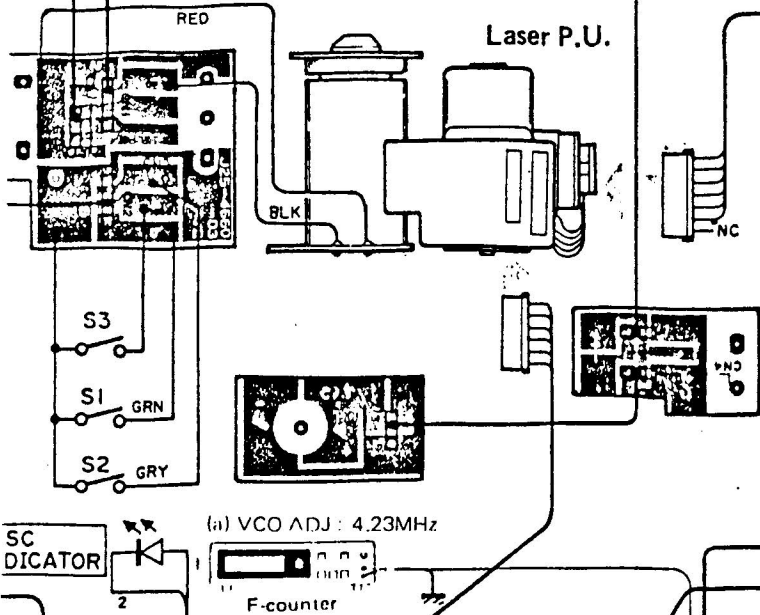
PROCESSOR UNIT (X32-1050-11)
(A/4) Component side view

Front

de view

MECHANISM ASS'Y (X92-1060-02)

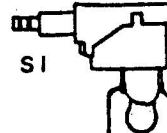
PC BOARD



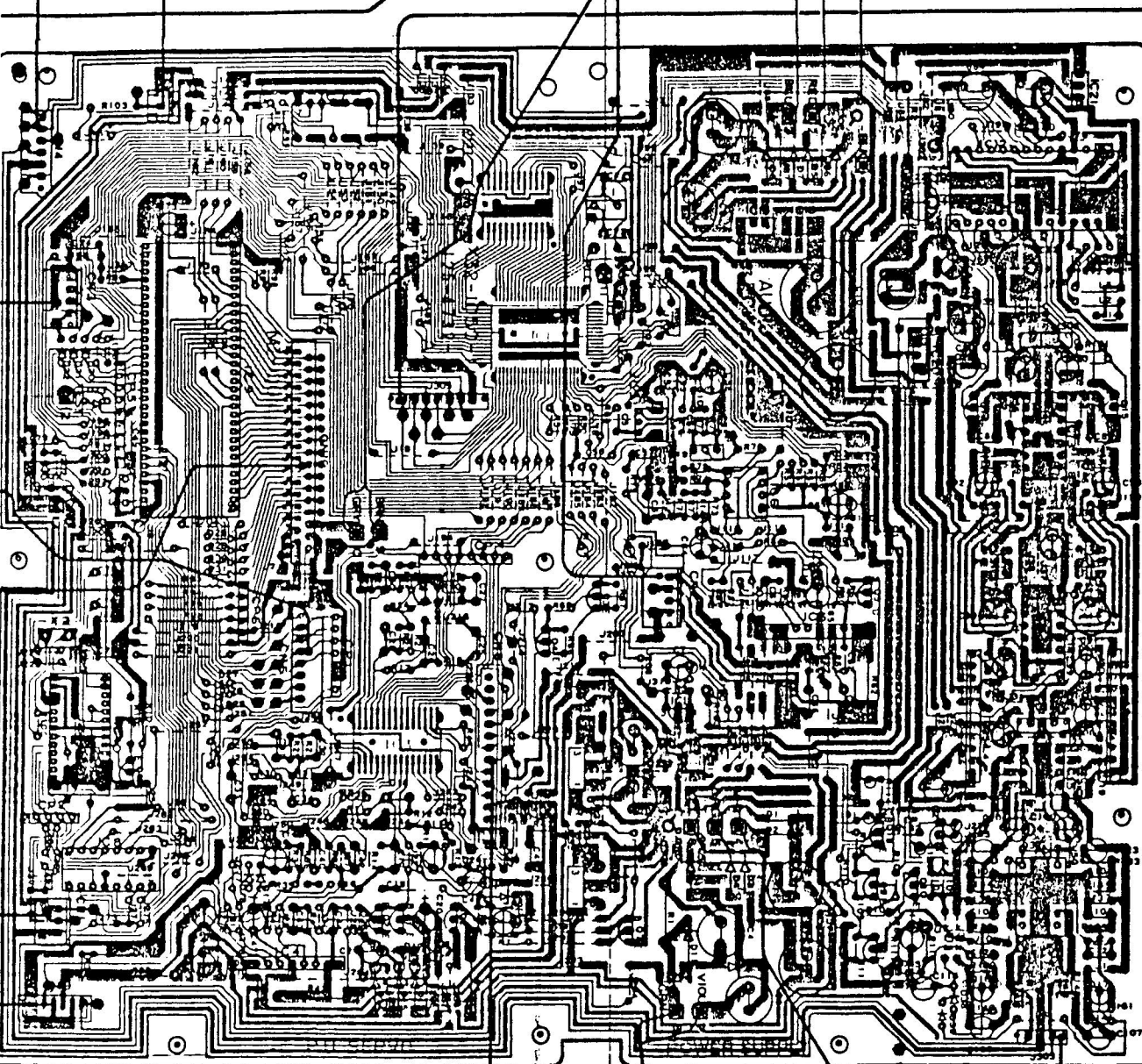
(f) Diffraction grid
 ADJ (PU) : See Fig. 1
 T. Error balance
 Coarsr ADJ :
 Fine ADJ :
 See Photo 5



POWER SW



(g) Focus gain ADJ : 40mVrms
 Tracking gain ADJ : 40mVrms



PROCESSOR UNIT (X32-1050-11)
 A/4) Component side view

Mi
 Coi
 sid

PC BOARD

- (f) Diffraction grid
 ADJ (PU) : See Fig. 1
 T. Error balance
 Coarsr ADJ :
 Fine ADJ :
 See Photo 5



Oscilloscope

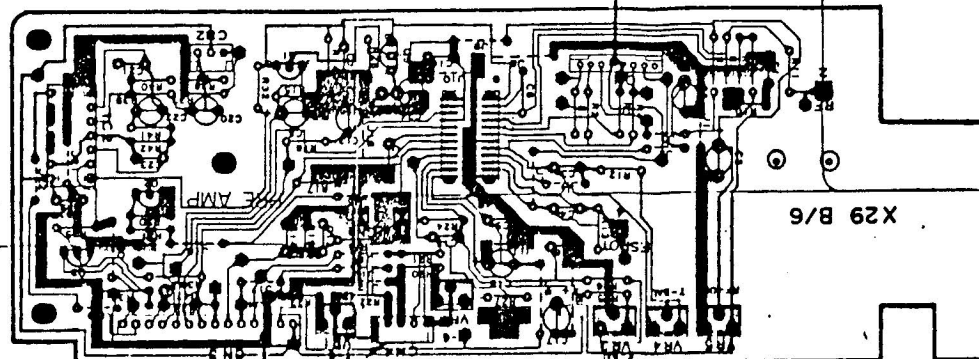
POWER SW



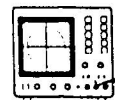
SI

- (g) Focus gain ADJ : 40mVrms
 Tracking gain ADJ : 40mVrms

C1 0.01μ

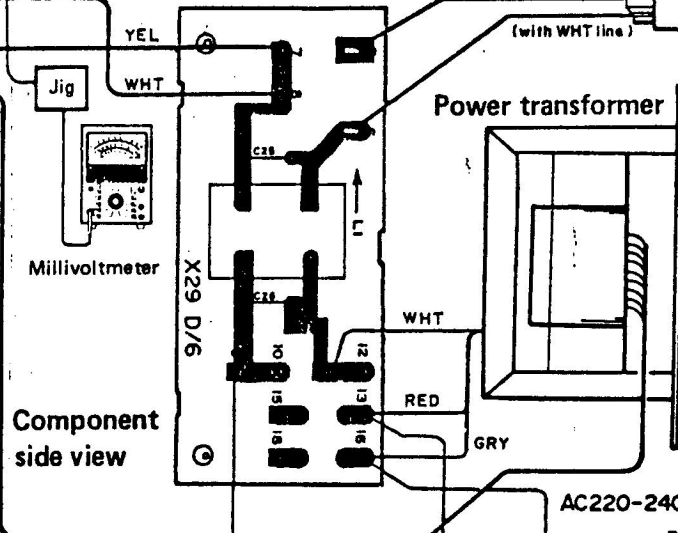
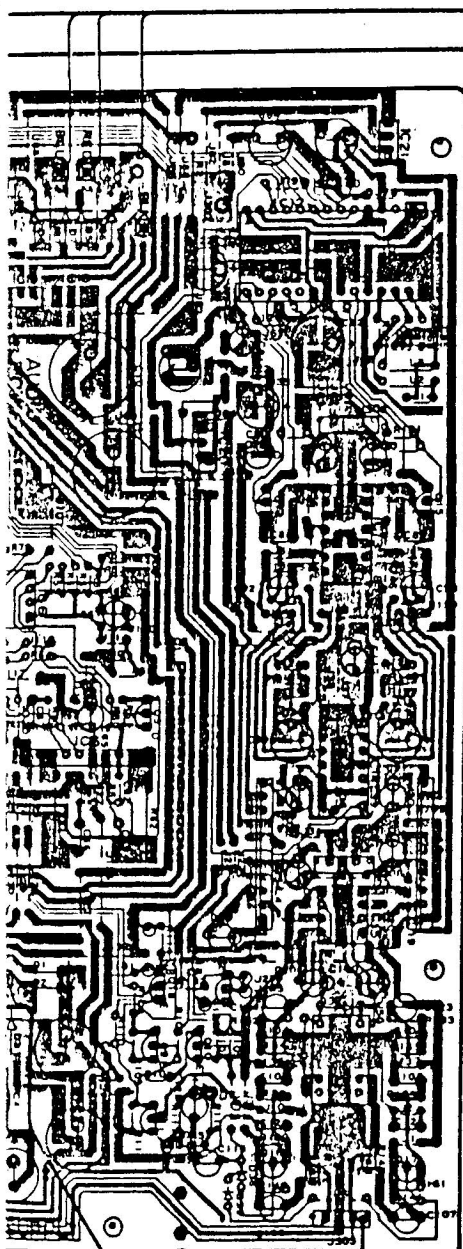


CONTROL CIRCUIT UNIT (X29-1632-72) (B/6)
 Component side view



Oscilloscope

- (d) RF offset ADJ : -0.60°
 Tangential setting :
 Maximum amplitude
 Focus offset Coarse A
 Maximum amplitude
 Tangential Fine ADJ
 Focus offset
 Optimum waveform



Component side view

X32-1050-11

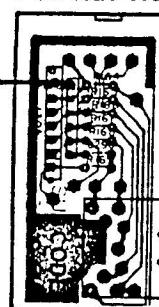
Q5	G
Q12	D
Q13	D
	S.C
Q14,Q15	D
	S

AC220~240V~

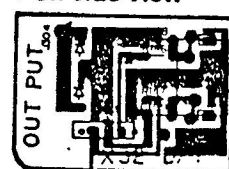
S2

AC120V~

Foil side view



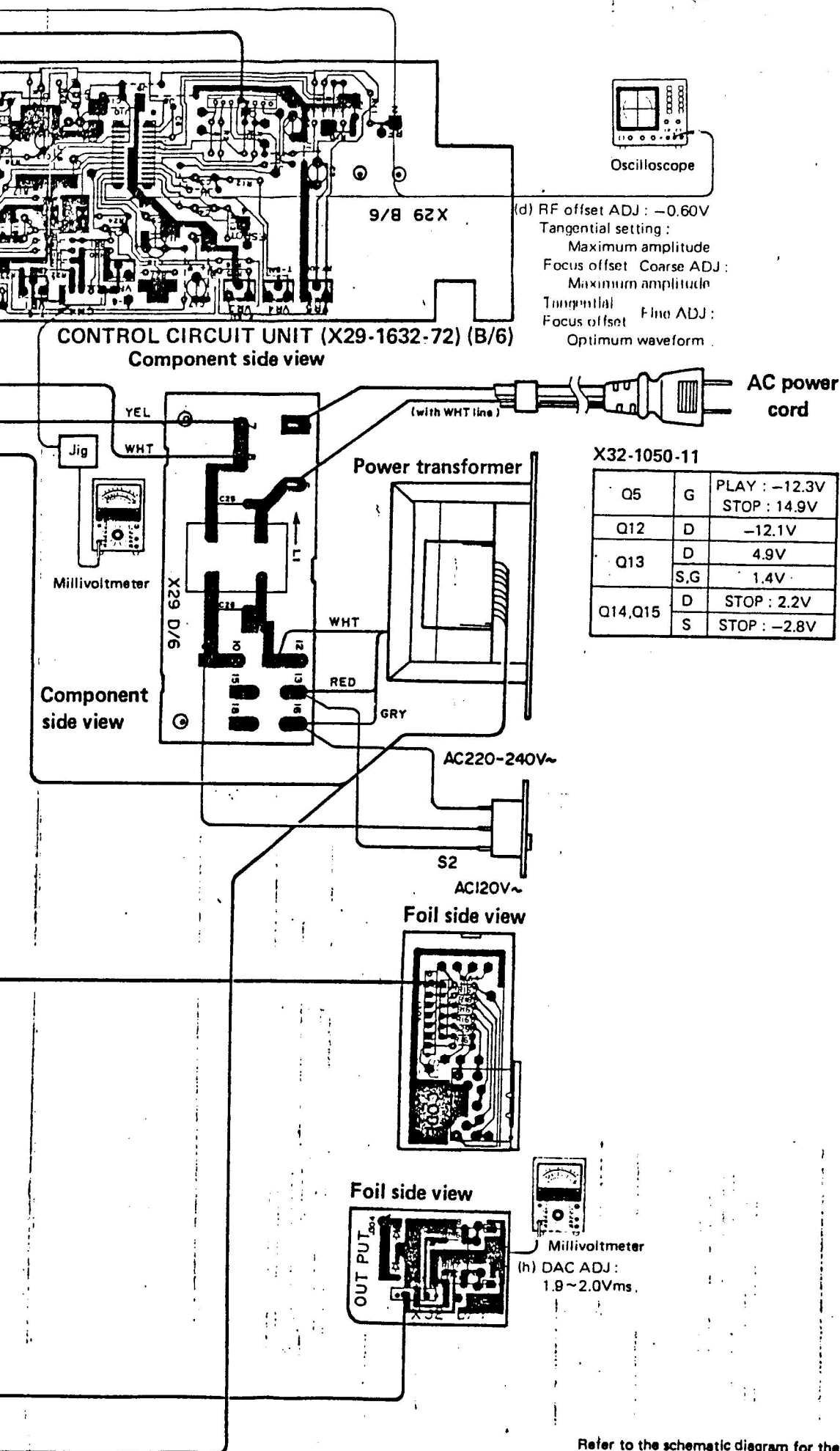
Foil side view



Millivoltmeter

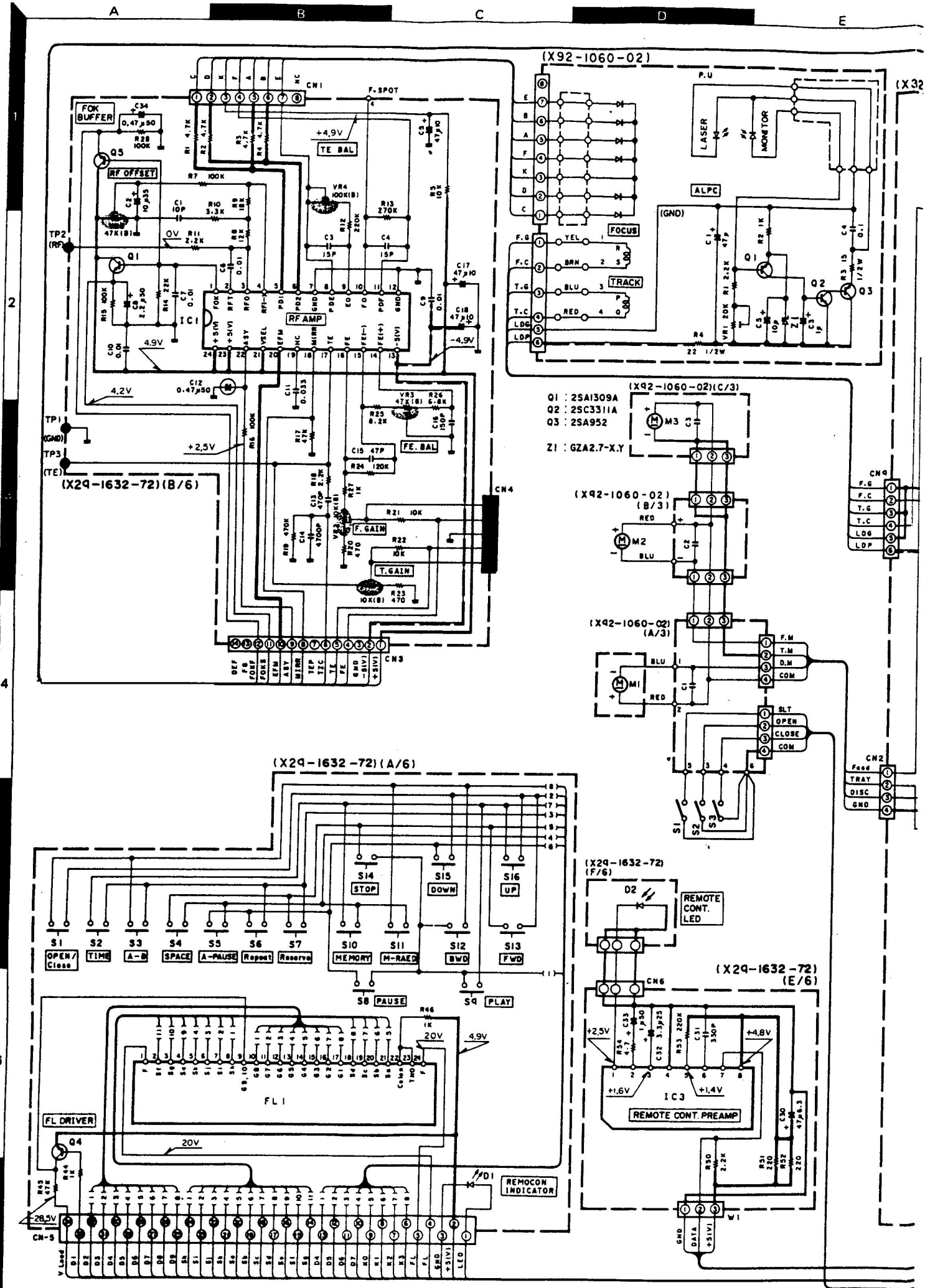
- (h) DAC ADJ :
 1.9~2.0Vms.

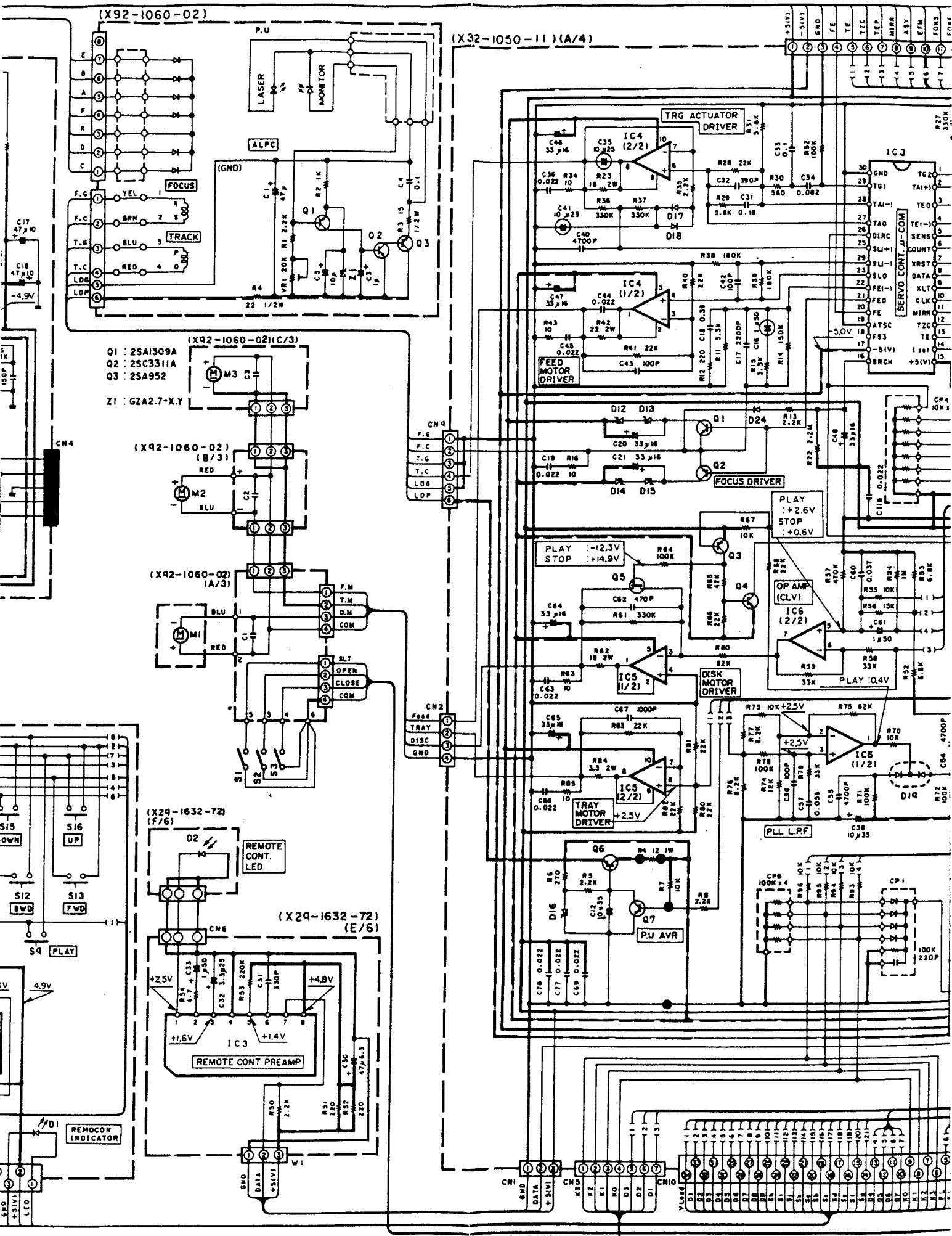
Refer to the sch

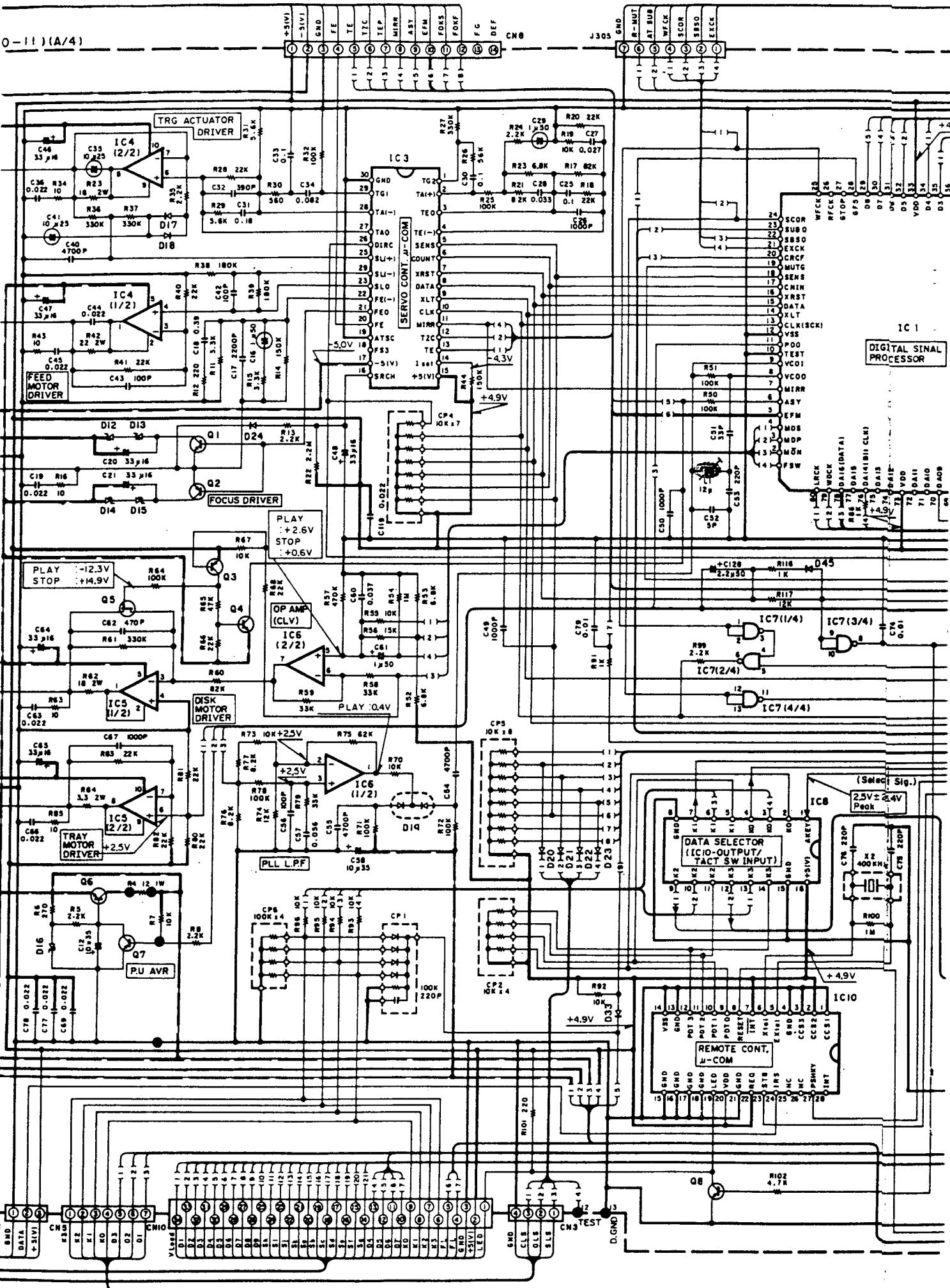


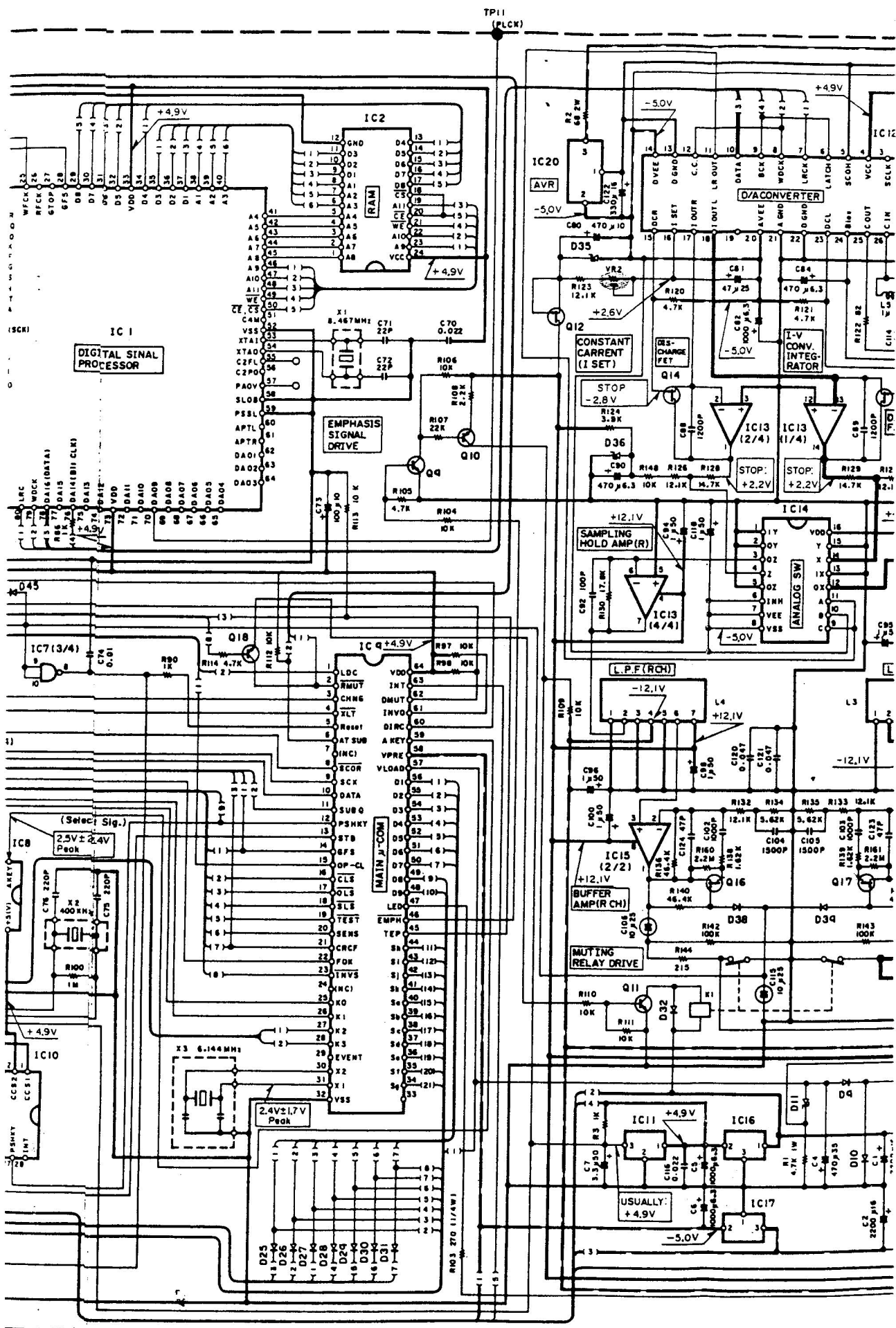
IC1	33	4.9V
	73	4.9V
IC2	24	4.9V
IC3	14	-4.3V
	15	4.9V
	17	-5.0V
IC5	6	2.5V
IC6	1	PLAY : 0.4V
	2	2.6V
	3	2.5V
	5	PLAY : 2.6V STOP : 0.6V
IC8	1	2.5V±2.4V Peak
	16	4.9V
IC9	64	4.9V
	58	-5.0V
IC11	1	4.9V
	2	0V
	3	4.9V
IC12	4	4.9V
	14	-5.0V
	20	-5.0V
IC13	1	STOP : 2.2V
	4	12.1V
	5	0V
	10	0V
	11	-12.1V
	14	STOP : 2.2V
IC14	8	-5.0V
	16	4.9V
IC15	4	-12.1V
	8	12.1V
IC16	1	-
	2	4.9V
	3	0V
IC17	1	0V
	2	-5.0V
	3	-
IC18	1	-
	2	12.1V
	3	0V
IC19	1	0V
	2	-12.1V
	3	-
IC20	1	0V
	2	-5.0V
IC21	1	12.1V
	2	4.9V
	3	0V
IC22	4	12.1V
	8	-12.1V

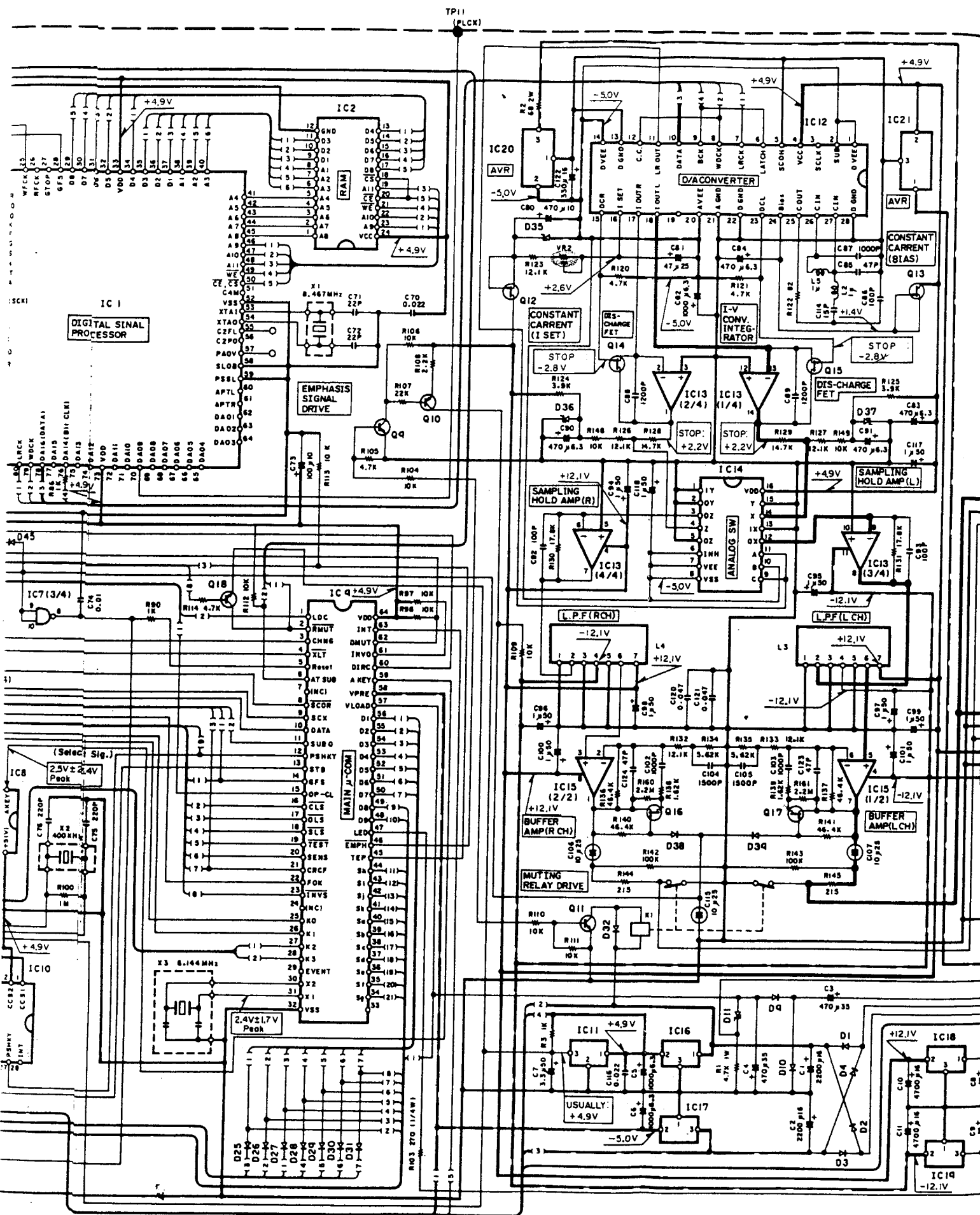
Refer to the schematic diagram for the values of resistors and capacitors.

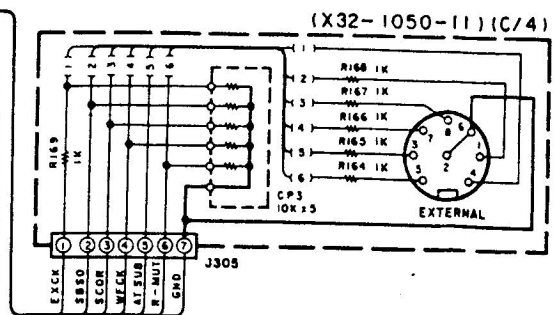
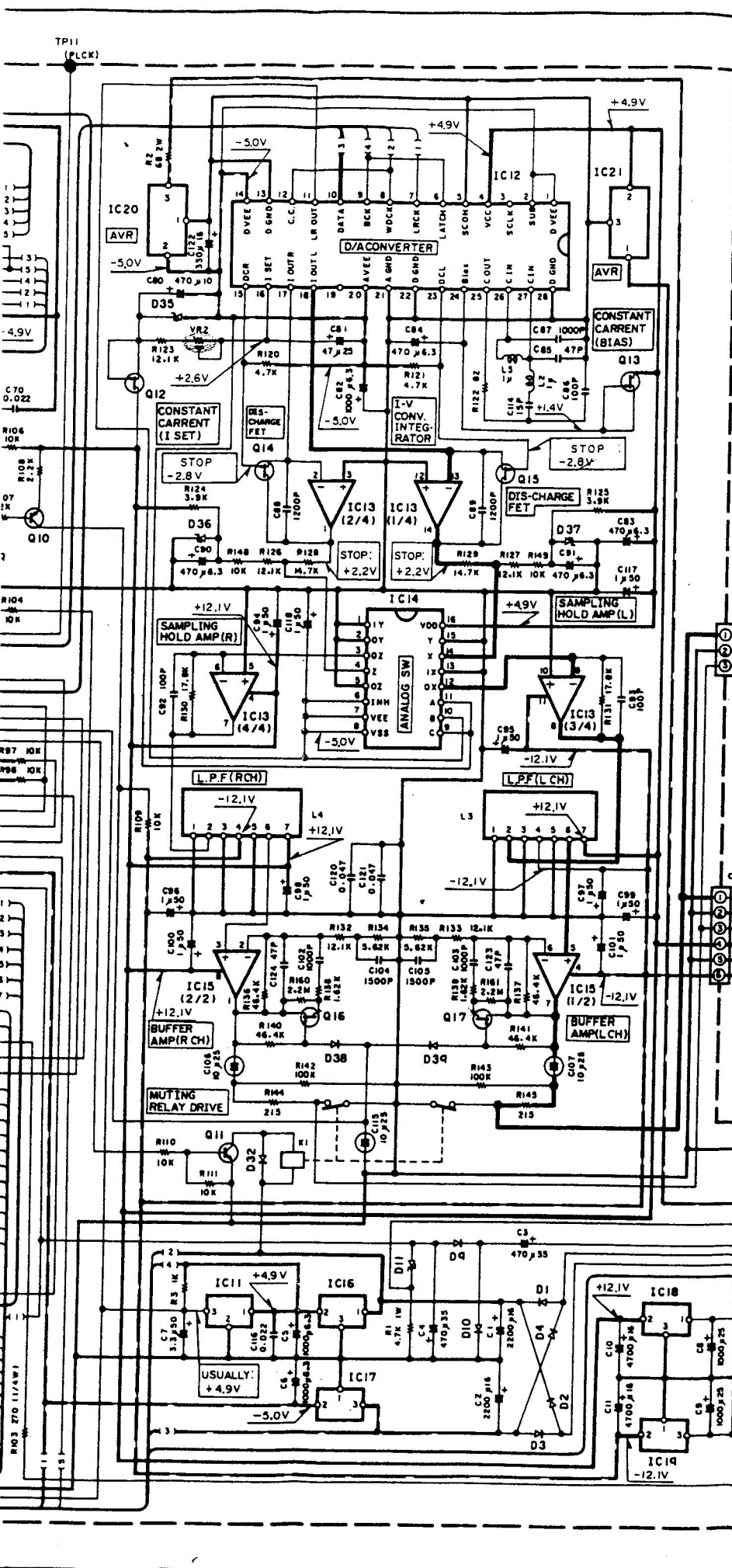






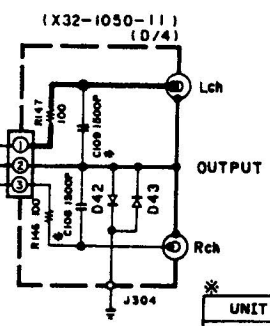




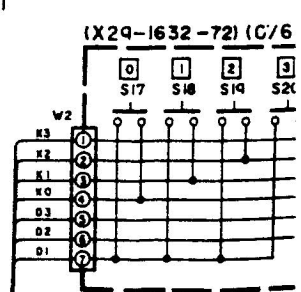
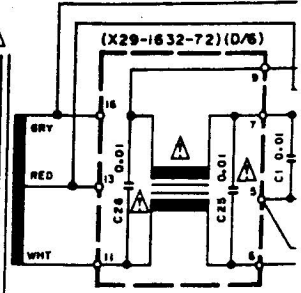
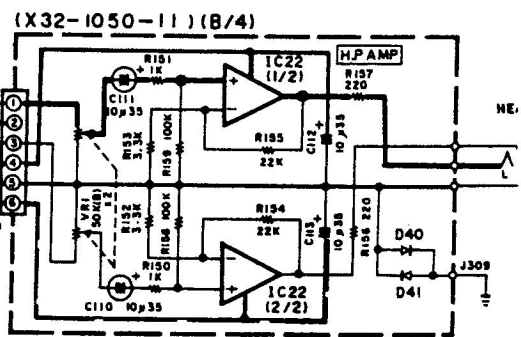


• DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

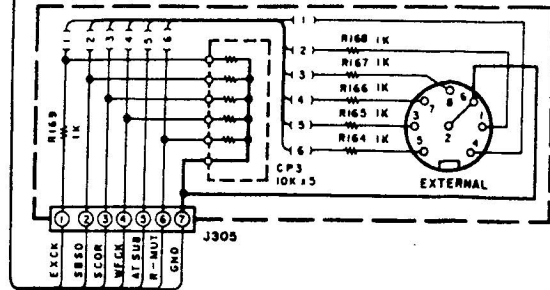
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (re to parts list). Δ Indicates safety critical components. reduce the risk of electric shock, leakage-current or resistor measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance returned to the customer.



UNIT NO.	DIVISION	C108, C109
X32-1050-00	U, M, U, E	NOT USED
X32-1050-11	K, P, X, T, E	1500P



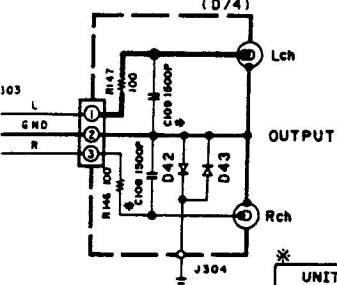
(X32-1050-11) (C/4)



- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

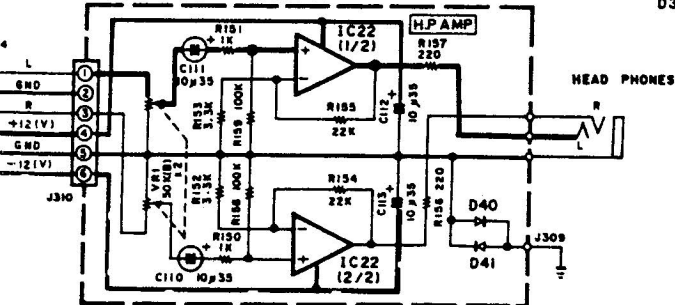
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

(X32-1050-11) (D/4)

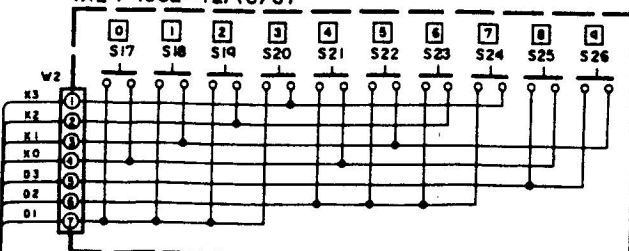


UNIT NO.	DIVISION	C108, C109
X32-1050-00	U, M, V, E	NOT USED
X32-1050-11	K, P, X, T, E	1500P

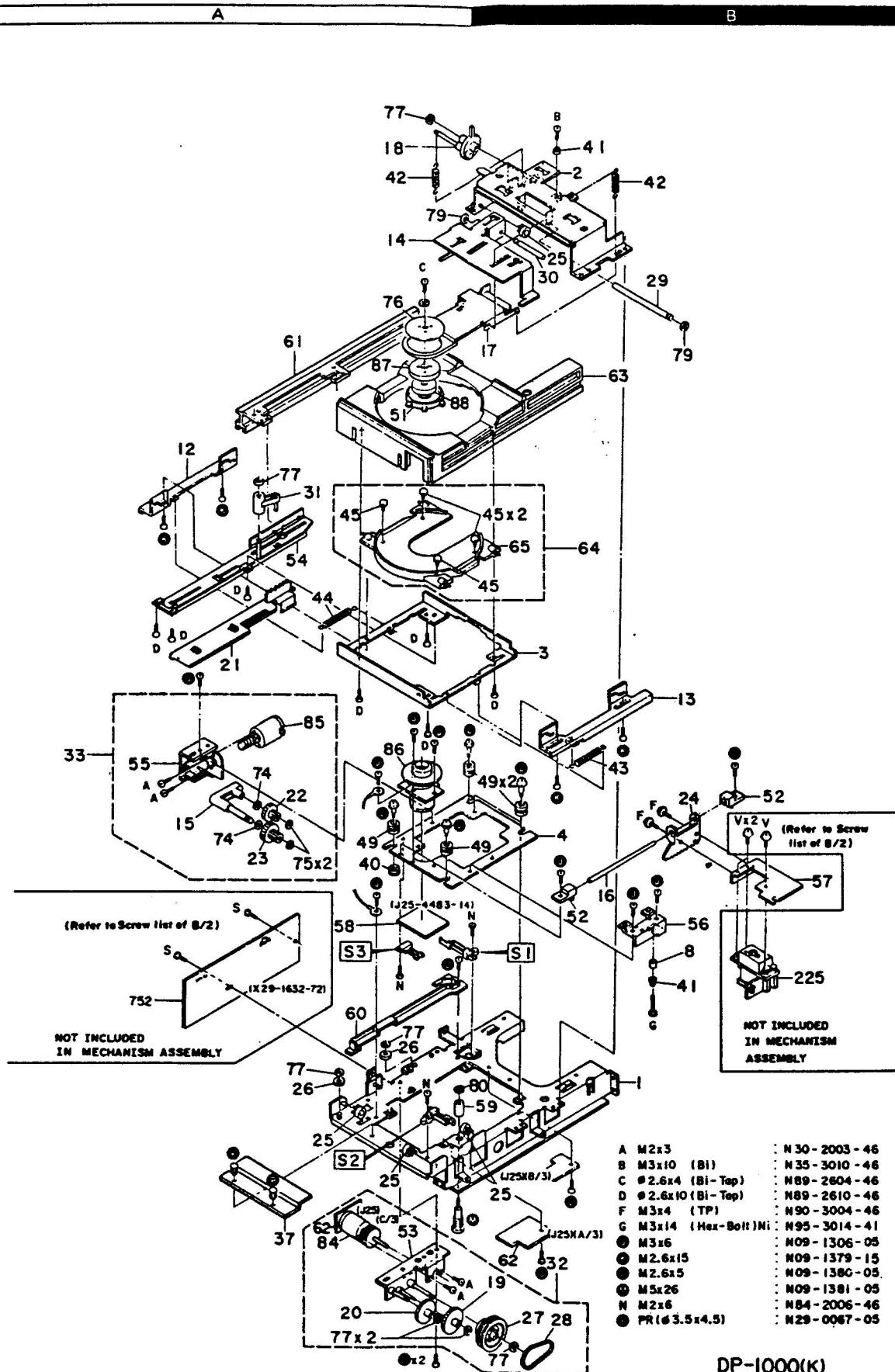
(X32-1050-11) (B/4)



(X29-1632-72) (C/6)

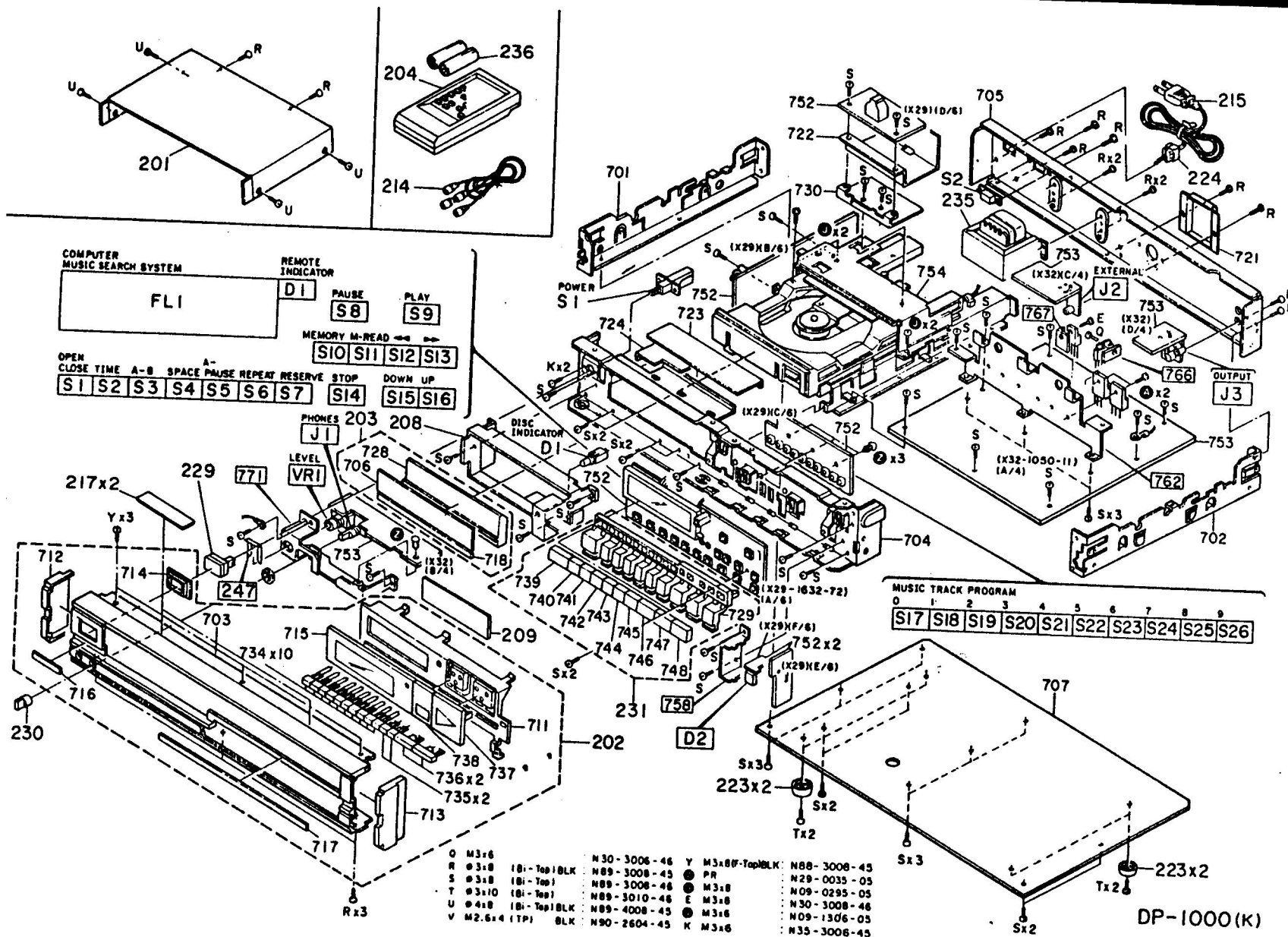


EXPLODED VIEW (MECHANISM)



DP-1000(K)

EXPLODED VIEW(UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
224 225 -	1E 3B	*	J42-0083-05 J91-0295-05 J61-0307-05	POWER CORD BUSHING PICKUP WIRE BAND		
229 230 231	1C 2C 2D	*	K27-1082-04 K29-2201-04 K29-2209-03	KNØB (BUTTON) POWER KNØB (BUTTON) LEVEL KNØB ASSY		
Δ 235 Δ 235 Δ 235	1E 1E 1E	* * *	L01-6831-05 L01-6834-05 L01-6834-05	POWER TRANSFORMER POWER TRANSFORMER POWER TRANSFORMER	KP UMUEXT E	
J Z	1D, 1E 1E		N09-1306-05 N29-0035-05	TAPPING SCREW (3X6) PUSH RIVET (3.5X5.5)		
Δ S1 Δ S2 Δ S2	1D 1E 1E		S40-1066-05 S31-2083-05 S31-2083-05	PUSH SWITCH (POWER TYPE) SLIDE SWITCH (POWER TYPE) SLIDE SWITCH (POWER TYPE)	UMUEXT E	
236	1D		W09-0022-05	BATTERY		
CONTROL CIRCUIT UNIT(X29-1632-72)						
D1 C1 C2 C3 C5 C6	1C .4		B30-0431-05 CC45FSL1H100D CE04KW1V100M CC45FSL1H150J CE04KW1A470M C91-0769-05	LED(LN21CPH) REMOTE INDICATOR CERAMIC 10PF D ELECTRO 10UF 35WV CERAMIC 15PF J ELECTRO 47UF 10WV CERAMIC 0.01UF M		
C7 C8 C9 C11 C12	.10		CK45FF1H103Z CE04KW1H2R2M CK45FF1H103Z CF92FV1H333J C90-1331-05	CERAMIC 0.010UF Z ELECTRO 2.2UF 50WV CERAMIC 0.010UF Z MF 0.033UF J ALUMINIUM ELECTROLYTIC C.		
C13 C14 C15 C16 C17	.18		CK45FB1H471K CF92FV1H472J CC45FSL1H470J CC45FSL1H151J CE04KW1A470M	CERAMIC 470PF K MF 4700PF J CERAMIC 47PF J CERAMIC 150PF J ELECTRO 47UF 10WV		
Δ C25 C30 C31 C32 C33	.26	* *	C91-0647-05 CE04JW0J470M C91-0751-05 CE04JW1E3R3M CE04JW1H010M	CERAMIC 0.01UF P ELECTRO 47UF 6.3WV CERAMIC 330PF K ELECTRO 3.3UF 25WV ELECTRO 1.0UF 50WV		
C34			CE04DW1HR47M	ELECTRO 0.47UF 50WV		
L1			L79-0702-05	LINE FILTER		
VR1 VR3 VR4 VR5	.2	*	R12-3100-05 R12-3103-05 R12-5048-05 R12-3103-05	TRIMMING POT(10K) F. GAIN, T. GAIN TRIMMING POT. (47K) FE BAL TRIMMING POT. (100K) TE BAL TRIMMING POT. (47K) RF OFFSET		
S1	-26		S40-1064-05	PUSH SWITCH		
D2 FL1 IC1 IC3 Q1		* * *	PH302C CP2162GR CX-20109 CX20106A 2SC1685(R,S)	PHOTO DIODE FLUORESCENT INDICATOR TUBE IC(RF AMP FOR 3-BEAM PICK-UP) IC(REMOTE CONTROLLER PREAMP) TRANSISTOR		

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Q1			2SC1815(Y,GR)	TRANSISTOR		
Q1			2SC2320(E,F)	TRANSISTOR		
Q1			2SC945(A)(Q,P)	TRANSISTOR		
Q4 .5			2SC1685(R,S)	TRANSISTOR		
Q4 .5			2SC1815(Y,GR)	TRANSISTOR		
Q4 .5			2SC2320(E,F)	TRANSISTOR		
Q4 .5			2SC945(A)(Q,P)	TRANSISTOR		
PROCESSOR UNIT(X32-1050-11)						
C1 .2			CE04KW1C222M	ELECTR 2200UF 16WV		
C3 .4			CE04KW1V471M	ELECTR 470UF 35WV		
C5 .6			CE04KW0J102M	ELECTR 1000UF 6.3WV		
C7			CE04KW1H3R3M	ELECTR 3.3UF 50WV		
C8 .9			CE04KW1E102M	ELECTR 1000UF 25WV		
C10 .11		*	CE04KW1C472M	ELECTR 4700UF 16WV		
C12			CE04KW1V100M	ELECTR 10UF 35WV		
C16		*	C90-1349-05	ALMINIUM ELECTROLYTIC C.		
C17			CF92FV1H222J	MF 2200PF J		
C18			CF92FV1H394J	MF 0.39UF J		
C19			C91-0085-05	CERAMIC 0.022UF N		
C20 .21			CE04KW1C330M	ELECTR 33UF 16WV		
C25			CF92FV1H104J	MF 0.10UF J		
C26			CF92FV1H102J	MF 1000PF J		
C27			CF92FV1H273J	MF 0.027UF J		
C28			CF92FV1H333J	MF 0.033UF J		
C29		*	C90-1349-05	ALMINIUM ELECTROLYTIC C.		
C30			CF92FV1H104J	MF 0.10UF J		
C31			CF92FV1H184J	MF 0.18UF J		
C32			CK45FB1H391K	CERAMIC 390PF K		
C33			CF92FV1H104J	MF 0.10UF J		
C34			CF92FV1H823J	MF 0.082UF J		
C35			C90-1332-05	ELECTR 10UF 25WV		
C36			C91-0085-05	CERAMIC 0.022UF N		
C40			CF92FV1H472J	MF 4700PF J		
C41			C90-1332-05	ELECTR 10UF 25WV		
C42 .43			CC45FSL1H101J	CERAMIC 100PF J		
C44 .45			CK45FF1H223Z	CERAMIC 0.022UF Z		
C46 -48			CE04KW1C330M	ELECTR 33UF 16WV		
C49 .50			C91-0757-05	CERAMIC 0.001UF K		
C51		*	CC45FUJ1H330J	CERAMIC 33PF J		
C52		*	CC45FUJ1H050C	CERAMIC 5.0PF C		
C53		*	CC45FUJ1H221J	CERAMIC 220PF J		
C54 .55			C91-0765-05	CERAMIC 0.0047UF M		
C56			CC45FSL1H101J	CERAMIC 100PF J		
C57			CF92FV1H563J	MF 0.056UF J		
C58			CE04KW1V100M	ELECTR 10UF 35WV		
C60			CF92FV1H393J	MF 0.039UF J		
C61			CE04KW1H010M	ELECTR 1.0UF 50WV		
C62			C91-0753-05	CERAMIC 470PF K		
C63			CK45FF1H223Z	CERAMIC 0.022UF Z		
C64 .65			CE04KW1C330M	ELECTR 33UF 16WV		
C66			CK45FF1H223Z	CERAMIC 0.022UF Z		
C67			CK45FB1H102K	CERAMIC 1000PF K		
C69 .70			CK45FF1H223Z	CERAMIC 0.022UF Z		
C71 .72			CC45FCH1H220J	CERAMIC 22PF J		

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C73 C74 C75 ,76 C77 ,78 C79			CE04KW1A101M C91-0769-05 CC45FSL1H221J CK45FF1H223Z C91-0769-05	ELECTR0 100UF 10WV CERAMIC 0.01UF M CERAMIC 220PF J CERAMIC 0.022UF Z CERAMIC 0.01UF M		
C80 C81 C82 C83 ,84 C85			CE04KW1A471M CE04KW1E470M CE04KWOJ102M CE04KWOJ471M C91-0737-05	ELECTR0 470UF 10WV ELECTR0 47UF 25WV ELECTR0 1000UF 6.3WV ELECTR0 470UF 6.3WV CERAMIC 47PF J		
C86 C87 C88 ,89 C90 ,91 C92 ,93		*	C91-0745-05 C91-0757-05 CQ93HP2A122J CE04KWOJ471M CQ09FS1H101JZS	CERAMIC 100PF K CERAMIC 0.001UF K MYLAR 1200PF J ELECTR0 470UF 6.3WV POLYSTY 100PF J		
C94 -101 C102,103 C104,105 C106,107 C108,109		*	CE04KW1H010M CQ93HP2A102J CQ93HP2A152J C90-1332-05 CF92FV1H152J	ELECTR0 1.0UF 50WV MYLAR 1000PF J MYLAR 1500PF J ELECTR0 10UF 25WV MF 1500PF J	KPXTE	
C110,111 C112,113 C114 C115 C116			C90-1332-05 CE04KW1V100M C91-0725-05 C90-1332-05 CK45FF1H223Z	ELECTR0 10UF 25WV ELECTR0 10UF 35WV CERAMIC 15PF J ELECTR0 10UF 25WV CERAMIC 0.022UF Z		
C117,118 C119 C120,121 C122 C123,124			CE04KW1H010M CK45FF1H223Z CK45FF1H473Z CE04KW1C331M C91-0174-05	ELECTR0 1.0UF 50WV CERAMIC 0.022UF Z CERAMIC 0.047UF Z ELECTR0 330UF 16WV POLYSTY 47PF K		
C128			CE04KW1H2R2M	ELECTR0 2.2UF 50WV		
J1 J2 J3	1C 1E 1E		E11-0104-15 E06-0806-05 E13-0226-05	PHONE JACK (3P) CYLINDRICAL RECEPTACLE PHONE JACK (2P) OUTPUT		
247	2C		J21-3326-05	JACK MOUNTING HARDWARE		
L1 L2 L3 ,4 X1 X2			L32-0328-05 L40-1092-14 L79-0715-05 L78-0211-05 L78-0202-05	OSCILLATING COIL SMALL FIXED INDUCTOR(1.0UH,M) ACTIVE FILTER RESONATOR (8.4672MHZ) RESONATOR (400KHZ)		
X3			L78-0212-05	RESONATOR (6.1447MHZ)		
A Z	1E 2C		N09-0295-05 N29-0035-05	HEXAGON HEAD BOLT(M3X8,+) PUSH RIVET (3.5X5.5)		
CP1 CP2 CP3 CP4 CP5		*	R90-0466-05 R90-0233-05 R90-0228-05 R90-0234-05 R90-0229-05	COMPOSITE ELEMENTS MULTI-COMP 10KX4 J 1/6W MULTI-COMP 10KX5 J 1/6W MULTI-COMP 10KX7 J 1/6W MULTI-COMP 10KX8 J 1/6W		
CP6 R1 R2 R4		*	R90-0291-05 RS14DB3A472J RS14KB3D680J RS14DB3A120J	MULTI-COMP 100KX4 J 1/6W FL-PROOF RS 4.7K J 1W FL-PROOF RS 68 J 2W FL-PROOF RS 12 J 1W		

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R33 R42 R62 R84 R123		*	RS14DB3D180J RS14DB3D220J RS14DB3D180J RS14DB3D3R3J RN14BK2C1212F	FL-PROOF RS 18 J 2W FL-PROOF RS 22 J 2W FL-PROOF RS 18 J 2W FL-PROOF RS 3.3 J 2W RN 12.1K F 1/6W		
R126,127 R128,129 R130,131 R132,133 R134,135		*	RN14BK2C1212F RN14BK2C1472F RN14BK2C1782F RN14BK2C1212F RN14BK2C5621F	RN 12.1K F 1/6W RN 14.7K F 1/6W RN 17.8K F 1/6W RN 12.1K F 1/6W RN 5.62K F 1/6W		
R136,137 R138,139 R140,141 R142,143 R144,145		*	RN14BK2C4642F RN14BK2C1621F RN14BK2C4642F RN14BK2C1003F RN14BK2C2150F	RN 46.4K F 1/6W RN 1.62K F 1/6W RN 46.4K F 1/6W RN 100K F 1/6W RN 215.0 F 1/6W		
R146,147 R148,149 VR1 VR2	1C		RN14BK2C1000F RN14BK2C1002F R10-4022-05 R12-3096-05	RN 100.0 F 1/6W RN 10.0K F 1/6W POTENTIOMETER(50K)LEVEL TRIMMING POT.(10K)0DA		
K1			SS1-2074-05	MAGNETIC RELAY		
D1 -10 D11 D12 -15 D16 D17 .18		*	DSM1A1 RD6.2E(B) RD3.6F(B) RD10E(B) 1SS133	DIODE ZENER DIODE ZENER DIODE ZENER DIODE DIODE		
D17 .18 D19 D20 -27 D20 -27 D28 -32			1SS176 1SV147 1SS133 1SS176 1SS133	DIODE VARISTOR DIODE DIODE DIODE		
D28 -32 D33 D33 D35 D36 .37		*	1SS176 1SS133 1SS176 RD7.5JS(B) RDS.1JS(B2)	DIODE DIODE DIODE ZENER DIODE ZENER DIODE		
D38 -43 D38 -43 D45 D45 IC1			1SS133 1SS176 1SS133 1SS176 CX23035	DIODE DIODE DIODE DIODE IC(DIGITAL SIGNAL PROCESSOR)		
IC2 IC2 IC2 IC3 IC4 .5			CXK5816M HM6116FP-4 MB8416-20LPF CX20108 TA7256P	IC(2K BYTE X8 RAM (CMOS)) IC(16K RAM) IC(16K RAM(CMOS)) IC(CD SERVØ) IC(OP AMP X2)		
IC6 IC6 IC7 IC8 IC9		*	AN6556 NJM4558D TC40H000P TC40H157P UPD7516HCW-230	IC(OP AMP X2) IC(OP AMP X2) IC(NAND X4) IC(QUAD 2-TØ-1 LINE DATA SEL IC(MICROPROCESSOR)		
IC10 IC11 IC12 IC13		*	LM6416E-504 PST518B CX20152 TL084CN	IC(MICROPROCESSOR) IC(SYSTEM RESET) IC(16-BIT D/A CONVERTER) IC(OP AMP X4)		

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IC14 IC15 IC15 IC16 IC17			UPD4053BC NJM4560D NJM4560D-N AN7805F AN7905F	IC(3-INPUT 2CH MPX/DE-MPX) IC(OP AMP X2) IC(OP AMP X2) IC(VOLTAGE REGULATOR/ +15V) IC(VOLTAGE REGULATOR/ -5V)		
IC18 IC19 IC20 IC21 IC22		*	UPC78L12 AN7912F AN7905F UPC78L05 MS218P	IC(VOLTAGE REGULATOR/ +12V) IC(VOLTAGE REGULATOR/ -12V) IC(VOLTAGE REGULATOR/ -5V) IC(VOLTAGE REGULATOR/ +5V) IC(OP AMP X2)		
Q1 Q2 Q3 Q3 Q3			2SC3246 2SA1286 2SA1015(Y,GR) 2SA1127NC(R,S) 2SA733(A)(Q,P)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q4 Q4 Q4 Q5 Q6			2SC1685(R,S) 2SC1815(Y,GR) 2SC945(A)(Q,P) 2SK246(Y,GR) 2SA1286	TRANSISTOR TRANSISTOR TRANSISTOR FET TRANSISTOR		
Q7 Q7 Q7 Q8 ,9 Q8 ,9			2SA1015(Y,GR) 2SA1127NC(R,S) 2SA733(A)(Q,P) 2SC1685(R,S) 2SC1815(Y,GR)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q8 ,9 Q10 Q10 Q10 Q11			2SC945(A)(Q,P) 2SA1015(Y,GR) 2SA1127NC(R,S) 2SA733(A)(Q,P) 2SD1302(S)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q12 Q13 Q14 ,15 Q16 ,17 Q18			2SK246(BL) 2SK170(BL) 2SK125(3,4) 2SK246(Y,GR) 2SC1685(R,S)	FET FET FET FET TRANSISTOR		
Q18 Q18			2SC1815(Y,GR) 2SC945(A)(Q,P)	TRANSISTOR TRANSISTOR		
MECHANISM ASS'Y(X92-1060-02)						
1 2 3 4	3B 1B 2B 2B	*	A10-0863-02 A11-0174-03 A11-0132-03 A11-0134-03	CHASSIS CALKING ASSY SUB CHASSIS CALKING ASSY SUB CHASSIS SUB CHASSIS		
8	2B	*	B09-0044-04	CAP		
C1			C91-0085-05	CERAMIC 0.022UF N		
12 13 14 15 16	1A 2B 1A 2A 2B	*	D10-1266-03 D10-1267-03 D10-1268-03 D10-1269-08 D10-1270-04	SLIDER (L) SLIDER (R) SLIDER ARM ROD		
17 18 19 20	1B 1A 3B 3A	*	D10-1271-03 D12-0105-15 D13-0159-08 D13-0160-08	ARM CAM GEAR GEAR		

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21	2A	*	D13-0161-03	GEAR		
22	2A		D13-0162-08	GEAR		
23	2A		D13-0163-08	GEAR		
24	2B	*	D13-0164-04	GEAR		
25	3A, 1B	*	D14-0106-04	ROLLER		
26	3A	*	D14-0107-04	ROLLER		
27	3B		D15-0220-08	PULLEY		
28	3B		D16-0104-08	BELT		
29	1B	*	D21-1051-04	SHAFT		
30	1B	*	D21-1052-04	SHAFT		
31	1A	*	D32-0122-04	STOPPER		
32	3B	*	D40-0353-05	DRIVE MECHANISM ASSY		
33	2A	*	D40-0354-05	DRIVE MECHANISM ASSY		
37	3A	*	F19-0348-04	BLIND PLATE		
40	2A	*	G11-1052-04	SOFT TAPE		
41	1B, 3B	*	G01-1710-04	COMPRESSION SPRING		
42	1A, 1B	*	G01-0675-04	TORSION COIL SPRING		
43	2B	*	G01-1523-04	EXTENSION SPRING		
44	2A	*	G01-1524-04	EXTENSION SPRING		
45	2A, 2B	*	G13-0166-04	CUSHION		
49	2A, 2B	*	J02-0158-05	INSULATOR		
51	1A	*	J11-0066-14	CLAMPER		
52	2B	*	J19-2153-04	HOLDER		
53	3A	*	J21-3507-08	MOUNTING HARDWARE ASSY		
54	2A	*	J21-3509-03	MOUNTING HARDWARE ASSY		
55	2A		J21-3511-08	MOUNTING HARDWARE ASSY		
56	2B	*	J21-3513-04	MOUNTING HARDWARE		
57	2B	*	J21-3672-04	MOUNTING HARDWARE		
58	2A		J25-4483-14	PRINTED WIRING BOARD		
59	3B	*	J31-0233-05	COLLAR (Ø4.1x8)		
60	3A	*	J90-0143-03	GUIDE		
61	1A	*	J90-0157-03	RAIL		
62	3B	*	J25-4660-03	PRINTED WIRING BOARD		
63	1B	*	J99-0024-12	TRAY		
64	2B	*	J99-0025-13	TRAY		
65	2B	*	J99-0026-13	TRAY		
			J61-0307-05	WIRE BAND		
74	2A		N29-0220-05	RETAINING RING (Ø2.4,CS)		
75	2A		N19-0143-04	FLAT WASHER (Ø3)		
77	1A, 3A	*	N19-0366-04	FLAT WASHER		
79	1A, 1B	*	N19-0882-04	FLAT WASHER		
			N29-0067-05	PUSH RIVET (3.5x4.5)		
80	3A		N29-0207-04	RETAINING RING (Ø2.5)		
J	2A, 2B		N09-1306-05	TAPPING SCREW (Ø3x6)		
K	2A, 2B	*	N09-1379-15	STEPPED SCREW (M2.6x15)		
L	2A, 2B	*	N09-1380-05	STEPPED SCREW (M2.6x5)		
M	3B	*	N09-1381-05	STEPPED SCREW (M5x26)		
P	3A		N19-0891-04	FLAT WASHER		
S1, 2	3A, 2B	*	S46-1045-05	LEAF SWITCH		
S3	2A	*	S46-1046-05	LEAF SWITCH		

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84	3A		T42-0049-25	MOTOR ASSY		
85	2A		T42-0051-08	MOTOR ASSY		
86	2A	*	T42-0053-14	MOTOR ASSY		
87	1A	*	T50-1023-04	Yoke		
88	1A	*	T99-0222-05	MAGNET		


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SPECIFICATIONS

Audio

Number of channels	2 channels
Frequency response	4 Hz ~ 20 kHz, ± 0.5 dB
Dynamic range	95 dB
Total harmonic distortion	0.0015% at 1 kHz
Channel separation	95 dB at 1 kHz
Wow & flutter	Unmeasurable limit
Line output level/output impedance	2 V/330 ohms
Headphones output level/impedance	32 mW/32 ohms

Disc

Playing time	Approx. 60 min/side
Diameter of the disc	120 mm (4-23/32")
Constant linear velocity	1.2 — 1.4 m/sec.

Signal format

Quantization	16 bits linear 1 channel
Sampling frequency	44.1 kHz
Channel modulation code	EFM (eight to fourteen modulation)

Pick up

Type	Optical pick up
Laser type	Semiconductor laser

General

Power requirements	120 V, 60 Hz (USA and Canada models) 120 V/220 — 240 V, 50/60 Hz (Switchable) (Other Countries)
Power consumptions	15 W
Dimensions	W 440 mm (17-5/16") H 88 mm (3-7/16") D 313 mm (12-5/16")
Weight (Net)	6.0 kg (13.2 lb)
Supplied accessories	Remote control unit RC-2000, Connection cables

Note:

We follow a policy of continuous advancements in development.
For this reason specifications may be changed without notice.

Note :

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
DP-1000						
201	1C	*	A01-1440-01	METALLIC CABINET	KPUMUE XE T	
202	2D	*	A20-4599-03	PANEL ASSY		
202	2D	*	A20-4599-03	PANEL ASSY		
202	2D	*	A20-4600-03	PANEL ASSY		
203	1C	*	A29-0059-03	PANEL ASSY		
204	1C	*	A70-0129-05	REMOTE CONTROLLER ASSY	KPUMUE XE T	
204	1C	*	A70-0129-05	REMOTE CONTROLLER ASSY		
204	1C	*	A70-0130-05	REMOTE CONTROLLER ASSY		
208	1C	*	B07-1415-02	ESCUTCHEON (TRAY)	K UE UE	
209	2D	*	B11-0124-04	SMOKED FILTER		
-			B46-0092-03	WARRANTY CARD		
-			B46-0094-03	WARRANTY CARD		
-			B46-0095-03	WARRANTY CARD		
-			B46-0096-13	WARRANTY CARD	X P E T	
-			B46-0121-03	WARRANTY CARD		
-			B46-0122-13	WARRANTY CARD		
-			B46-0123-03	WARRANTY CARD		
-		*	B50-5911-00	INSTRUCTION MANUAL(ENGLISH)		KPUMUE
-		*	B50-5911-00	INSTRUCTION MANUAL(ENGLISH)	XE PMXE M T E	
-		*	B50-5912-00	INSTRUCTION MANUAL(FRENCH)		
-		*	B50-5913-00	INSTRUCTION MANUAL(SPANISH)		
-		*	B50-5914-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B50-5915-00	INSTRUCTION MANUAL(G,D,I)		
-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U K	
-			B58-0269-04	CAUTION CARD		
-			B58-0326-04	CAUTION CARD		
-			B58-0327-04	CAUTION CARD		
-			B58-0389-04	CAUTION CARD		
-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE UE	
-			B59-0092-00	SERVICE DIRECTORY		
D1	1D		B30-0431-05	LED(LN21CPH) (DISC INDICATOR		
Δ C1			C91-0023-05	CERAMIC 0.01UF AC250V	UMUE KPXTE	
Δ C1			C91-0647-05	CERAMIC 0.01UF P		
Δ 214	1C		E30-0505-05	AUDIO CORD	E KP UMUE X	
Δ 215	1E		E30-0459-05	AC POWER CORD		
Δ 215	1E		E30-0780-05	AC POWER CORD		
Δ 215	1E		E30-0812-05	AC POWER CORD		
Δ 215	1E		E30-1341-05	AC POWER CORD		
Δ 215	1E		E30-1416-05	AC POWER CORD	T	
217	2C		G13-0439-04	CUSHION (55X10X1)	KPUMUE XE T	
-		*	H01-5672-04	ITEM CARTON CASE		
-		*	H01-5672-04	ITEM CARTON CASE		
-		*	H01-5673-04	ITEM CARTON CASE		
-		*	H10-1856-02	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-1857-12	POLYSTYRENE FOAMED FIXTURE	M KPUEX TE	
-			H20-0417-04	PROTECTION COVER(460X370X360)		
-			H25-0224-04	PROTECTION BAG (800X400)		
-			H25-0224-04	PROTECTION BAG (800X400)		
-			H25-0232-04	PROTECTION BAG (235X350)		
223	2D, 2E		J02-0126-05	FOOT		

E: Scandinavia & Europe* H: Audio Club K: USA

P: Canada

T: England U: PX(Far East, Hawaii)

UE: AAFES(Europe)

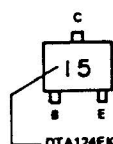
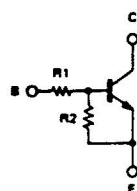
X: Australia M: Other Areas

Δ indicates safety critical components.

CLASSIFICATION OF CHIP PARTS

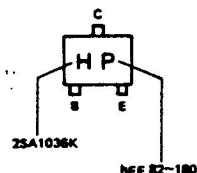
チップ部品の見方/Classification of Chip parts

Digital transistor/デジタルトランジスタ	Symbol/記号	R1	R2	Transistor/トランジスタ	Symbol/記号	Diode/ダイオード
DTA/DTC114EK	14/24	10k	10k	2SA1036K	H <input type="checkbox"/>	DAN202K Silver/シルバー
DTA/DTC114YK	54/64	10k	47k	2SA1037K	F <input type="checkbox"/>	
DTA/DTC114TK	94/04	10k	—	2SC2411K	C <input type="checkbox"/>	
DTA/DTC124EK	15/25	22k	22k	2SC2412K	B <input type="checkbox"/>	
DTA/DTC124XK	35/45	22k	47k	2SC2413K	A <input type="checkbox"/>	
DTA/DTC143EK	13/23	4.7k	4.7k	2SC2059K	J <input type="checkbox"/>	DAP202K Green/グリーン
DTA/DTC143TK	93/03	4.7k	—	2SC3082K	S <input type="checkbox"/>	
DTA/DTC144EK	16/26	47k	47k	2SB852K	U <input type="checkbox"/>	
DTA/DTC144WK	76/86	47k	22k	2SD1383K	W <input type="checkbox"/>	
DTA/DTC143XK	33/45	4.7k	10k	2SD1757K	AA <input type="checkbox"/>	
				2SD1328	ID <input type="checkbox"/>	
				2SC2412LN	L <input type="checkbox"/>	



hFE

M : 39~ 82
N : 56~ 120
P : .82~ 180
Q : 120~ 270
R : 180~ 390
S : 270~ 560
E : 390~ 820
U : 560~1200
A : 1000~
B : 5000~



ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	SPIELER-EINSTELLUNG	ABGLEICH-PUNKT	ABGLEICHUNG	ABB.
13	SPURHALTEVERSTÄRKUNG EINSTELLUNG	Eine Test-Disc, die so einwandfrei wie möglich sein sollte, auflegen und laden.	Eine Servo-Einstellvorrichtung an CN4 von X29-1632(A/4) anschließen. ($f=1,0\text{kHz}$, $V_{OUT}=40\text{mV}_{rms}$)	Normale Wiedergabe	VR1 von X29-1632(B/6) drehen.	So einstellen, dass der an die Vorrichtung angeschlossene Millivoltmeter 40mV_{rms} anzeigt.	(g)
14	DAC EINSTELLUNG	Test-Disc YDS-7 TYPE 3	Einen Millivoltmeter an den Ausgangsanschluss anschließen.	Wiedergabe 1 kHz, 0dB Signal	VR2 X32-1050(A/4) drehen.	So einstellen, dass ein Ausgangspegel zwischen 1,9 und $2,0\text{V}_{rms}$ erhalten wird.	(h)

Beugungsgitter-Einstellung

In der Test-Betriebsart einstellen
(nur mit Fokus-Servo)

Hinweis : Die Test-Betriebsart ist der Zustand, in der die Spannungsversorgung nach Kurzschließen von TP12 (TEST-12) und TP13 (D.GND-13) in der Signalverarbeitungseinheit (X32-1050-00) (A/4) eingeschaltet wurde.

Für Einzelheiten siehe das Wartungshandbuch des DP-2000.

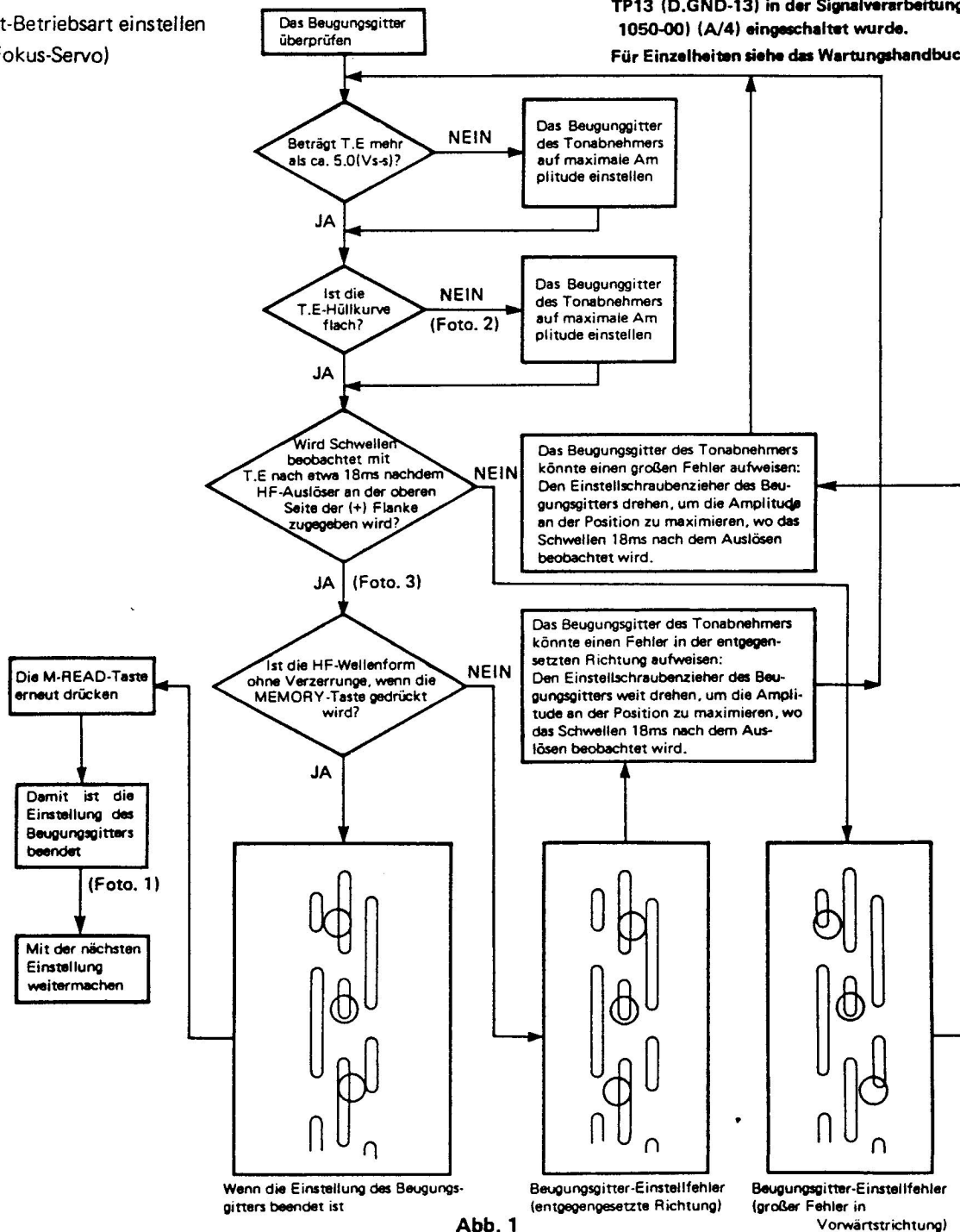


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